

DEEP SEA MOLLUSCA FROM WEST OF CAPE POINT, SOUTH AFRICA

By

K. H. BARNARD

South African Museum, Cape Town

[Accepted July 1962]

(With 11 figures in the text)

CONTENTS

	PAGE
Introduction	407
List of species	408
Species found at each station	413
Descriptions and notes	418
Summary	451
Acknowledgments	451
References	451

INTRODUCTION

The material described here was obtained by Dr. F. H. Talbot of the South African Museum, on board the r.s. *Africana II* of the Division of Sea Fisheries in August and December 1959, at twelve stations off Cape Point and west of the Cape Peninsula. It comprises approximately 590 specimens, of which more than half are Prosobranch Gastropods. The number of species in the groups is as follows: Gastropods 43; Heteropods 2; Pteropods 5; Tectibranchs 2; Nudibranch 1; Solenogastres 2-3; Scaphopods 6; Cephalopods 3-4; Lamellibranchs 11; Brachiopod 1. Total: about 78.

One Cephalopod is here recorded. Two or three species of Octopods were also obtained, but these have not yet been identified.

An attempt has been made to identify the Solenogastres, but owing to technical difficulties in section-cutting, the attempt has been temporarily postponed. There appear to be two, possibly three, species.

The material contains several species obtained many years ago by the Cape Government trawler s.s. *Pieter Faure*, under the direction of the late Dr. J. D. F. Gilchrist. The *Africana II*, however, has sampled depths greater than those worked by the *Pieter Faure*. Therefore, as might have been expected, several new records and new species have been obtained.

Most of the new forms belong to the family *Turritidae* (Gastropoda); the *Pieter Faure* also collected more representatives of this family than of any other; and similar results have been obtained in other regions by other expeditions.

ANNALS OF THE SOUTH AFRICAN MUSEUM
JUN 17 1963

The most interesting discovery has been the Volute *Guivillea alabastrina* (Watson), originally taken by the *Challenger* between Marion Island and the Crozets; and later by the *Scotia* near the South Orkneys.

Some of the species have already been recorded in Part III of the author's 'Contributions to . . . fauna of South African Marine Mollusca', and in the *Journal of Conchology* (see list of titles).

The whole collection made by Dr. Talbot and submitted to me for report is now deposited in the South African Museum and is catalogued with South African Museum registration numbers.

The Lamont Geological Observatory research vessel *Vema* obtained abyssal molluscs from stations off the west coast of South Africa and south-west of Cape Town (St. 14, 16, 18, 51, 52, 53), which have been reported on by Clarke (1961). This author seems to have been misinformed as to the true position of the Agulhas Basin, and has erroneously localized Stations 51 and 52 (1,000 and 800 miles respectively *south-west* of Cape Town) in the 'Agulhas' Basin. The naming of two new species from Station 51 as '*agulhasae*' is also very misleading.

LIST OF SPECIES

GASTROPODS

	<i>Station</i>
	<i>No.</i>
<i>Terebra</i> sp.	A322 1 dead; more material wanted
<i>Surcula scalaria</i> Brnrd. 1958	A189 3 dead
	{ A190 2 dead
	{ A191 2 living
	{ A192 1 living
	{ A193 1 living, 1 dead (fresh)
<i>Clavatula lobatopsis</i> n. sp.	{ A315 2 living
	{ A316 1 living
	{ A317 11 living
	{ A318 2 living
	{ A319 1 dead
	{ A322 6 living, 3 dead
<i>Moniliopsis psilarosis</i> n. sp.	{ A316 1 living, 1 dead
	{ A322 3 dead
<i>Typhlomangelia</i> (?) <i>polythele</i> n. sp.	A317 2 living
	{ A193 2 living
<i>Cythara</i> (?) <i>glaucocreas</i> n. sp.	{ A315 1 dead (ex anemone)
	{ A318 1 living, 2 dead (ex anemone)
	{ A191 5 living
	{ A192 3 dead
<i>Cythara</i> (?) <i>dagama</i> n. sp.	{ A315 1 dead
	{ A317 5 dead
	{ A322 1 living, 1 juv. dead

<i>Typhlosyrinx pyrropelex</i> n. sp.	{	A191 1 living, 1 dead
		A317 6 dead
		A318 2 dead
		A319 1 dead
		A322 3 living
<i>Typhlosyrinx chrysopelex</i> n. sp.		A322 1 living
<i>Typhlosyrinx subrosea</i> n. sp.		A318 1 living, 1 dead
<i>Philbertia cala</i> (Watson)		A316 3 living
<i>Mangilia</i> sp.	{	A189 1 dead
		A315 1 dead
		A317 2 dead
<i>Daphnella</i> (?) <i>verecunda</i> n. sp.		A189 2 living, 1 dead
<i>Daphnella</i> (?) <i>bitrudis</i> n. sp.		A193 2 dead
<i>Gymnobela</i> sp.	{	A189 1 dead; more material wanted
		A317 1 dead
? Gen. (<i>Turritidae</i>)	{	A317 1 dead; more material wanted
		A319 2 dead
<i>Cancellaria euthyme</i> i Brnrd. 1960.. ..		A322 1 living
<i>Admete decapensis</i> Brnrd. 1960		A315 1 living
<i>Guivillea alabastrina</i> (Watson)	{	A315 1 dead (apex only)
		A316 1 protoconch
		A317 1 fragment (columella)
		A319 1 dead (half grown)
		A322 1 dead (half grown) and frag- ments
? Gen. (? <i>Fasciolariiidae</i>)		A315 2 dead (ex anemone); more material wanted
<i>Charitodoron pasithea</i> Tomlin	{	A189 2 living, 1 dead
		A322 1 dead
		A190 1 living
		A191 1 living
<i>Charitodoron thalia</i> Tomlin	{	A192 2 living
		A193 2 living, 1 dead
		A318 1 living
		A322 5 dead
<i>Nux alabaster</i> Brnrd. 1960	{	A190 1 living
		A318 2 living
		A193 1 living
<i>Neptunea bonae-spei</i> n. sp.	{	A318 2 living, 2 dead
		A322 1 living
<i>Prosipho torquatus</i> n. sp.	{	A315 1 living
		A317 1 dead
		A322 1 dead

<i>Pyrene</i> cf. <i>profundi</i> Dall .. ..	..	{	A193 1 dead
			A322 8 living, 10 dead
			A189 4 living, 7 dead
			A191 9 living, 2 dead
			A192 2 living
			A193 8 living, 1 dead
<i>Trophon acceptans</i> Brnrd. 1959 .. ..	..	{	A315 4 living, 1 dead
			A316 2 living, 2 dead
			A317 10 living
			A319 2 living
			A322 3 dead
<i>Trophon</i> cf. <i>droueti</i> Dautzenberg ..	..		A322 3 dead
<i>Columbarium rotundum</i> Brnrd. 1959 ..	..		A189 6 living, 16 dead
<i>Columbarium angulare</i> Brnrd. 1959 ..	..		A318 2 living, 4 dead
<i>Thallassocyon bonus</i> Brnrd. 1960..	..	{	A190 1 living
			A193 1 living
			A315 1 dead
			A317 1 living
			A190 2 dead
			A192 2 living, 1 dead
			A193 1 and 2 juv. living
<i>Oöcorys watsoni</i> Locard .. ..	..	{	A316 1 dead (large)
			A317 2 dead
			A318 1 living, 2 dead
			A319 1 living, 18 dead
			A322 2 living, 3 dead
			A189 1 living
			A190 1 dead
			A191 3 living
<i>Polynices cleistopsila</i> Brnrd. 1963 ..	..	{	A192 2 dead
			A317 1 living, 2 dead
			A319 6 dead
			A322 3 dead
<i>Falsilunatia pseudopsila</i> Brnrd. 1963 ..	..		A315 1 living
<i>Turbonilla</i> sp. (cf. <i>kraussi</i>) .. ..	..		A189 1 dead; more material wanted
<i>Cerithiella taylori</i> Brnrd. 1963 ..	..		A190 1 dead
<i>Lamellaria capensis</i> Bergh .. ..	..		A316 2 living
<i>Scala bonae-spei</i> Brnrd. 1963 .. ..	..	{	A193 2 living
			A316 1 living
<i>Abyssochrysos melanioides</i> Tomlin ..	..	{	A190 1 dead
			A319 2 living, 5 dead
<i>Calliotropis metallica</i> (W.-M. & A.) ..	..	{	A190 1 living, 1 dead
			A322 1 living

<i>Calliotropis pompe</i> n. sp. .. ..	..	..	{ A316 1 dead
			{ A317 1 living, 1 dead
<i>Basilissa gelida</i> n. sp. .. ..	..	..	A190 1 living
<i>Calliostoma glaucophaos</i> n. sp. .. ..	..	..	A318 2 living
? <i>Solariella</i> .. ..	..	..	A190 1 dead; more material wanted

HETEROPODS

<i>Atlanta</i> sp. .. ..	..	..	A193 1 dead
<i>Cardiapoda richardi</i> Vayss .. ..	..	..	A190 1 living

PTEROPODS

			{ A189 2 dead
			{ A190 18 dead
			{ A193 14 dead
<i>Cavolinia tridentata</i> (Forsk.) .. ..	..	..	{ A315 4 dead
			{ A317 1 dead
			{ A318 11 dead
			{ A319 24 dead
			{ A322 3 dead
<i>Cavolinia limbata</i> D'Orb... ..	..	..	A190 1 dead
<i>Cavolinia</i> ? <i>globulosa</i> .. ..	..	..	A315 2 dead
<i>Diacria trispinosa</i> (Lesueur) .. ..	..	..	{ A190 1 dead
			{ A322 3 dead
<i>Herse</i> (<i>Cuvieria</i>) <i>columnella</i> (Rang) .. ..	..	..	A322 2 dead

TECTIBRANCHS

			{ A192 1 juv. living
			{ A315 3 living
<i>Scaphander puncto-striatis</i> Mighels .. ..	..	..	{ A317 1 living
			{ A318 1 living
			{ A319 3 dead
			{ A322 1 juv. living
<i>Gastropteron</i> sp. .. ..	..	..	{ A318 1 living
			{ A319 1 living

NUDIBRANCHS

<i>Doridoxa benthalis</i> n. sp.	A316 1
--	----	----	--------

SOLENOGASTRES

In course of study .. ..	..	..	{ A191
			{ A193
			{ A316 (large)
			{ A316 (small)

SCAPHOPODS

<i>Dentalium capense</i> Tomlin	A189 1 living, 2 dead
---------------------------------------	----	----	-----------------------

<i>Dentalium eualdes</i> n. sp. .. ..	..	..	..	..	{	A190 1 living A191 8 living A192 1 and 1 juv. living A193 14 living, 3 dead A315 1 adult living, 1 juv. dead A317 18 living, 2 dead A318 1 living, 1 dead A319 12 living, 1 dead A322 4 living, 1 juv. dead
<i>Dentalium lardum</i> n. sp. .. ..	..	..	..	..	{	A193 5 dead A318 2 dead A322 1 living, 1 juv. dead
<i>Dentalium</i> sp. (9 ribs) .. ..	..	..	..	..	{	A190 2 dead; more material wanted A315 1 dead A322 2 dead
<i>Dentalium</i> sp. (18-22 ribs) .. ..	..	..	..	..		A189 17 dead; more material wanted
<i>Cadulus promontorii</i> Brnrd. MS. .. ..	..	..	..	..		A189 3 living

CEPHALOPODS

Eggs .. ..	..	..	..	..	..	{	A190 A318
<i>Octopus</i> sp. ♂ .. ..	..	..	..	..	..		A189 1
<i>Octopus</i> sp. juv. .. ..	..	..	..	..	..		A192 1
<i>Octopus</i> sp. .. ..	..	..	..	..	..		A318 1
<i>Octopus</i> sp. large .. ..	..	..	..	..	..		A319 1
<i>Octopus</i> sp. small .. ..	..	..	..	..	..		A319 1
<i>Leachia cyclura</i> Lesueur .. ..	..	..	..	..	..		A192 1

LAMELLIBRANCHS

<i>Nucula (Pronucula) benguelana</i> Clarke .. ..	..	..	..	..	..		A322 1 living
<i>Malletia estheriopsis</i> n. sp. .. ..	..	..	..	..	..	{	A317 2 living A319 3 living A321 1 living A322 2 living
<i>Leda parsimonia</i> n. sp. .. ..	..	..	..	..	..		A317 1 living
<i>Leda macella</i> n. sp. .. ..	..	..	..	..	..	{	A190 1 living A192 1 living A317 1 living A319 a lot living
? <i>Sarepta</i> sp. .. ..	..	..	..	..	..		A322 1 valve

<i>Nux alabaster</i> Brnrd. 1960	..	..	..	..	n. g., n. sp.; Type
<i>Thalassocyon bonus</i> Brnrd. 1960	..	..	..	..	n. g., n. sp.
<i>Oöcorys watsoni</i> Locard					
<i>Polynices cleistopsila</i> Brnrd. 1963	..	..	..	..	n. sp.
<i>Cerithiella taylori</i> Brnrd. 1963	..	..	..	..	n. sp.; Type
<i>Abyssochrysos melanioides</i> Tomlin					
<i>Calliotropis metallica</i> (W-M. & A.)					
<i>Basilissa gelida</i>	..	..	..	..	n. sp.; Type
? <i>Solariella</i>	..	..	..	..	more material wanted
<i>Cavolinia tridentata</i> (Forsk.)					
<i>Cavolinia limbata</i> D'Orb.					
<i>Diacria trispinosa</i> (Lesueur)					
<i>Cardiropoda richardi</i> Vayss.	..	..	..	..	new to fauna-list
<i>Dentalium eualdes</i>	..	..	..	..	n. sp.
<i>Dentalium</i> sp. (9 ribs)	..	..	..	..	new to fauna-list
<i>Cephalopod</i> eggs					
<i>Limopsis</i> sp. cf. <i>straminea</i> Smith	..	..	..	..	new to fauna-list
<i>Leda macella</i>	..	..	..	..	n. sp.
33° 36' S., 16° 15' E., 1,520-1,570 fathoms (A191)					
<i>Clavatula lobatopsis</i>	..	..	..	..	n. sp.; Types
<i>Cythara</i> (?) <i>dagama</i>	..	..	..	..	n. sp.; Types
<i>Typhlosyrinx pyrropelex</i>	..	..	..	..	n. sp.; Types (of juvenile)
<i>Charitodoron thalia</i> Tomlin					
<i>Trophon acceptans</i> Brnrd. 1959					
<i>Polynices cleistopsila</i> Brnrd. 1963	..	..	..	..	n. sp.
<i>Dentalium eualdes</i>	..	..	..	..	n. sp.; Types
<i>Solenogastres</i>	..	..	..	..	new to fauna-list
<i>Limopsis</i> sp. cf. <i>straminea</i> Smith	..	..	..	..	new to fauna-list
33° 45½' S., 16° 23½' E., 1,480 fathoms (A192)					
<i>Clavatula lobatopsis</i>	..	..	..	..	n. sp.
<i>Cythara</i> (?) <i>dagama</i>	..	..	..	..	n. sp.
<i>Charitodoron thalia</i> Tomlin					
<i>Trophon acceptans</i> Brnrd. 1959					
<i>Oöcorys watsoni</i> Locard					
<i>Polynices cleistopsila</i> Brnrd. 1963	..	..	..	..	n. sp.
<i>Scaphander puncto-striatus</i> Mighels					
<i>Dentalium eualdes</i>	..	..	..	..	n. sp.
<i>Octopus</i> sp. juv.					
<i>Leachia cyclura</i> Lesueur	..	..	..	..	new to fauna-list
<i>Limopsis</i> sp. cf. <i>straminea</i> Smith	..	..	..	..	new to fauna-list
<i>Leda macella</i>	..	..	..	..	n. sp.
33° 49' S., 16° 30' E., 1,500 fathoms (A193)					
<i>Clavatula lobatopsis</i>	..	..	..	..	n. sp.
<i>Cythara</i> (?) <i>glaucocreas</i>	..	..	..	..	n. sp.

<i>Daphnella(?) bitrudis</i>	..	..	..	..	n. sp.; Types
<i>Charitodoron thalia</i>	Tomlin				
<i>Neptunea bonae-spei</i>	..	..	..	..	n. sp.
<i>Pyrene</i> cf. <i>profundi</i>	Dall	..	..	..	new to fauna-list
<i>Trophon acceptans</i>	Brnrdr.	1959	..	..	n. sp.
<i>Thalassocyon bonus</i>	Brnrdr. 1960				
<i>Oöcorys watsoni</i>	Locard				
<i>Scala bonae-spei</i>	..	..	..	..	n. sp.; Types
<i>Atlanta</i>	sp.				
<i>Cavolinia tridentata</i>	(Forskal)				
<i>Solenogastres</i>	..	..	..	..	new to fauna-list
<i>Dentalium eualdes</i>	..	..	..	..	n. sp.
<i>Dentalium lardum</i>	..	..	..	..	n. sp.; Types
<i>Limopsis</i> sp. cf. <i>straminea</i>	Smith	..	..	..	new to fauna-list
34° 37' S., 17° 03' E., 1,580-1,620 fathoms (A315)					
<i>Clavatula lobatopsis</i>	..	..	..	..	n. sp.
<i>Cythara(?) glaucocreas</i>	..	..	..	..	n. sp.
<i>Cythara(?) dagama</i>	..	..	..	..	n.sp.
<i>Mangilia</i>	sp. new to fauna-list				
? <i>Fasciolariiidae</i> ? gen.	..	..	..	..	new to fauna-list
<i>Admete decapensis</i>	Brnrdr. 1960 n. sp.; Type				
<i>Guivillea alabastrina</i>	(Watson) new to fauna-list				
<i>Prosipho torquatus</i>	..	..	..	..	n. sp.; Type
<i>Trophon acceptans</i>	Brnrdr. 1959				
<i>Thalassocyon bonus</i>	Brnrdr. 1960 n. sp.				
<i>Falsilunatia pseudopsila</i>	..	..	..	..	n. sp.; Type
<i>Cavolinia tridentata</i>	(Forskal)				
<i>Cavolinia ? globulosa</i>					
<i>Scaphander puncto-striatus</i>	Mighels				
<i>Dentalium eualdes</i>	..	..	..	..	n. sp.
<i>Dentalium</i> sp. (9 ribs)	..	..	..	..	new to fauna-list
<i>Limopsis</i> sp. cf. <i>straminea</i>	Smith	..	..	..	new to fauna-list
<i>Cuspidaria</i> sp. cf. <i>maxima</i>	..	..	..	..	new to fauna-list
[Fragment of <i>Argonauta</i>]					
34° 42' S., 16° 54' E., 1,725-1,780 fathoms (A316)					
<i>Clavatula lobatopsis</i>	..	..	..	..	n. sp.
<i>Moniliopsis psilarosis</i>	..	..	..	..	n. sp.; Types
<i>Philbertia cala</i>	(Watson) new to fauna-list				
<i>Guivillea alabastrina</i>	(Watson) new to fauna-list				
<i>Trophon acceptans</i>	Brnrdr. 1959				
<i>Oöcorys watsoni</i>	Locard				
<i>Lamellaria capensis</i>	Bergh				
<i>Scala bonae-spei</i>	..	..	..	..	n. sp.
<i>Calliotropis pompe</i>	..	..	..	..	n. sp.

- Doridoxa benthalis* n. sp.; Type
Solenogastres new to fauna-list
Brachiopod
 33° 50' S., 16° 30' E., 1,480–1,660 fathoms (A317)
Clavatula lobatopsis n. sp.
Typhlomangelia polythele n. sp.; Types
Cythara (?) *dagama* n. sp.
Typhlosyrinx pyrropelex n. sp.
Mangilia sp. new to fauna-list
Gymnobela sp. new to fauna-list
Turritid. Gen. ? new to fauna-list
Guivillea alabastrina (Watson)
Prosipho torquatus n. sp.
Trophon acceptans Brnrd. 1959
Thalassocyon bonus Brnrd. 1960 n. sp.
Oöcorys watsoni Locard
Polynices cleistopsila Brnrd. 1963 n. sp.
Calliotropis pompe n. sp.; Types
Cavolinia tridentata (Forsk.)
Scaphander puncto-striatus Mighels
Dentalium eualdes n. sp.
Limopsis sp. cf. *straminea* Smith new to fauna-list
Leda macella n. sp.
Leda parsimonia n. sp.; Type
Malletia estheriopsis n. sp.; Types
 [Fragment of *Fanthina*]
 33° 52' S., 16° 51' E., 1,380–1,520 fathoms (A318)
Clavatula lobatopsis n. sp.
Cythara (?) *glaucocreas* n. sp.; Type
Typhlosyrinx pyrropelex n. sp.
Typhlosyrinx subrosea n. sp.; Types
Charitodoron thalia Tomlin
Nux alabaster Brnrd. 1960 n. sp.
Neptunea bonae-spei n. sp.; Types
Columbarium angulare Brnrd. 1959
Oöcorys watsoni Locard
Calliostoma glaucophaos n. sp.; Types
Cavolinia tridentata (Forsk.)
Scaphander puncto-striatus Mighels
Gastropteron sp. new to fauna-list
Dentalium eualdes n. sp.
Dentalium lardum n. sp.
Cephalopod eggs
Octopus sp.

34° 05' S., 16° 58' E., 1,470–1,490 fathoms (A319)

- Clavatula lobatopsis* n. sp.
Typhlosyrinx pyrropelex n. sp.
Turritid. Gen. ? new to fauna-list
Guivillea alabastrina (Watson)
Trophon acceptans Brnrd. 1959
Oöcorys watsoni Locard
Polynices cleistopsila Brnrd. 1963 n. sp.
Abyssochrysos melanioides Tomlin
Cavolinia tridentata (Forsk.)
Scaphander puncto-striatus Mighels

Gastropteron sp. new to fauna-list
Dentalium eualdes

Octopus sp. (large)

Octopus sp. (small)

Limopsis sp. cf. *straminea* Smith new to fauna-list

Leda macella n. sp.; Types

Malletia estheriopsis n. sp.

34° 33' S., 16° 42' E., 1,770–1,880 fathoms (A321)

Malletia estheriopsis n. sp.

34° 36' S., 17° 00' E., 1,500–1,760 fathoms (A322)

Terebra sp. new to fauna-list

Clavatula lobatopsis n. sp.

Moniliopsis psilarosis n. sp.

Cythara (?) *dagama* n. sp.

Typhlosyrinx pyrropelex n. sp.

Typhlosyrinx chrysopelex n. sp.; Type

Cancellaria euthyme Brnrd. 1960 n. sp.; Type

Guivillea alabastrina (Watson) new to fauna-list

Charitodoron pasithea Tomlin

Charitodoron thalia Tomlin

Neptunea bonae-spei n. sp.

Prosipho torquatus n. sp.

Pyrene cf. *profundi* Dall new to fauna-list

Trophon acceptans Brnrd. 1959

Trophon cf. *droueti* Dautzenberg new to fauna-list

Oöcorys watsoni Locard

Calliotropis metallica (W.-M. & A.)

Cavolinia tridentata (Forsk.)

Diacria trispinosa (Lesueur)

Herse (*Cuvieria*) *columnella* (Rang)

Scaphander puncto-striatus Mighels

Dentalium eualdes n. sp.

Dentalium lardum n. sp.

<i>Dentalium</i> sp. (9 ribs)	..	..	..	..	new to fauna-list
<i>Abra longicallus</i> (Scacchi)	..	..	..	..	new to fauna-list
<i>Limopsis</i> sp. cf. <i>straminea</i> Smith	..	..	..	..	new to fauna-list
<i>Cuspidaria</i> sp. cf. <i>maxima</i>	..	..	..	..	new to fauna-list
<i>Nucula</i> (<i>Pronucula</i>) <i>benguelana</i> Clarke	..	..	..	..	new to fauna-list
? <i>Sarepta</i> sp.	..	..	..	..	new to fauna-list
<i>Malletia estheriopsis</i>	..	..	..	..	n. sp.

DESCRIPTIONS AND NOTES

GASTROPODA

Terebridae

Terebra sp.

(Fig. 1 a)

Protoconch 2 ($2\frac{1}{2}$) whorls, last whorl bulbous, smooth. Postnatal whorls 7. Axial plicae 14-15 on 2nd whorl, increasing to 18 on last whorl, straight, slightly protractive; intervening grooves shallow. Slight indication of a subsutural spiral groove, and 4-5 very faint spiral lirae in the axial grooves. Base with growthlines and very faint spiral striae. 6.5×2 mm. Very pale corneous, protoconch opaque white.

$34^{\circ} 36' S.$, $17^{\circ} 00' E.$, 1,500-1,760 fathoms, 1 dead (S. Afr. Mus. A9854, F. H. Talbot coll.).

Remarks. As further and better specimens may be obtained later, no specific name is attached to this specimen.

Turritidae

Subfam. *Turrinae*[*Turris lobata*]

In 1958 I united *Pieter Faure* specimens from Cape Point with specimens from Cape Natal (Durban)-East London under the specific name *lobata* Sow., and transferred it to the genus *Turris*. The new material raises doubts as to the conspecificity of the shells, and the generic position.

Comparison of the 7 additional specimens with the previous material shows that the Cape Point shells can be separated on conchological characters from those of the Cape Natal-East London area, though the differences are subtle (slightly exaggerated in the figures herewith).

From the *Pieter Faure* material two radulae were obtained, one from an East London shell and one from a Cape Point shell, both of them extracted from poorly preserved animals. They seemed to show a slight difference in the shape of the lateral plate. On re-examination, and comparison with 4 radulae

from the new material, the difference appears to be due merely to the slightly different position in which the plates are lying in the mounted preparation.

A more important point, however, is that the 4 additional radulae show distinctly the presence of a central plate and of an accessory wing-like appendage, albeit both are very delicate.

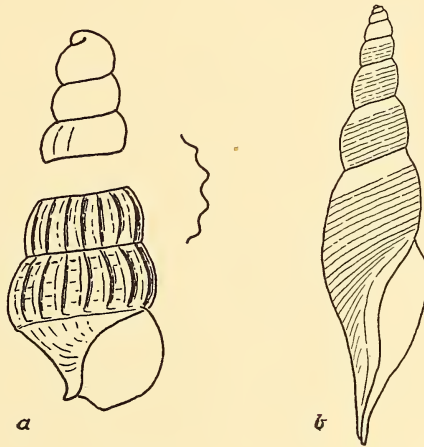


FIG. 1. *a*, *Terebra* sp. Apex and base, with cross-section of whorl. *b*, *Daphnella* (?) *bitrudis* n. sp.

These Cape Point shells must therefore be placed in *Clavatula*. Possibly when more material is obtained from the Natal-East London area, it will show that *lobata* has been incorrectly transferred to *Turris*; but for the present I retain it in *Turris*.

Turris lobata (Sow.)

(Fig. 2 *b*)

Turris lobata (Sow.), [*partim*] Barnard, 1958, p. 107, figs. 3 *i*, 6 profile.

To the description should be added: upper margin of whorl straight, suture visible; the sharp keel continuous, without any trace of nodules; the mid-whorl nodules always rounded, though they may be divided by a slight sulcus.

In my description the number of midwhorl tubercles was not given. Sowerby's original description gave 13 on the penultimate whorl, and his figure seems to confirm this. There is, however, a possibility that '13' was a misprint for 18, because a lobate specimen, labelled by Sowerby, has 13 on the 3rd whorl, 18 on the 9th and 22 on the 10th; other specimens agree, none having less than 16 tubercles on the 8th whorl.

Natal and East London area, 440 and 310 fathoms (S. Afr. Mus. A1673, A1674, P.F. coll.).

The remarks in the above reference on the formation of the lobe on the outer lip apply to *lobata* (Sow.).

There is one dead shell from the Cape Point area, 380–475 fathoms (S. Afr. Mus. A1675, P.F. coll.), however, which seems referable to *lobata*. Although damaged several times and repaired by the animal, and corroded, nevertheless it shows the diagnostic features of *lobata*, not those of the other Cape Point shells from much greater depths.

Clavatula lobatopsis n. sp.

(Fig. 2 a)

Turris lobata (Sow.), [*partim*] Barnard, 1958, p. 107, fig. 3 j.

Extremely like *Turris lobata* but upper margin of whorl undulate, and slightly raised so that the actual suture is scarcely or only partly visible in lateral view; instead of the sharp keel in *lobata* there is a blunt lira with small nodules, corresponding in number with those in the mid-whorl series, often divided by a slight sulcus; between this lira and the mid-whorl nodules there may be 2–3 feeble lirae, or none at all; the mid-whorl nodules are sharper than in *lobata*, more tubercular than nodular, and they may be divided by a faint sulcus; on the last whorl (or last half thereof) in the larger shells the tubercles

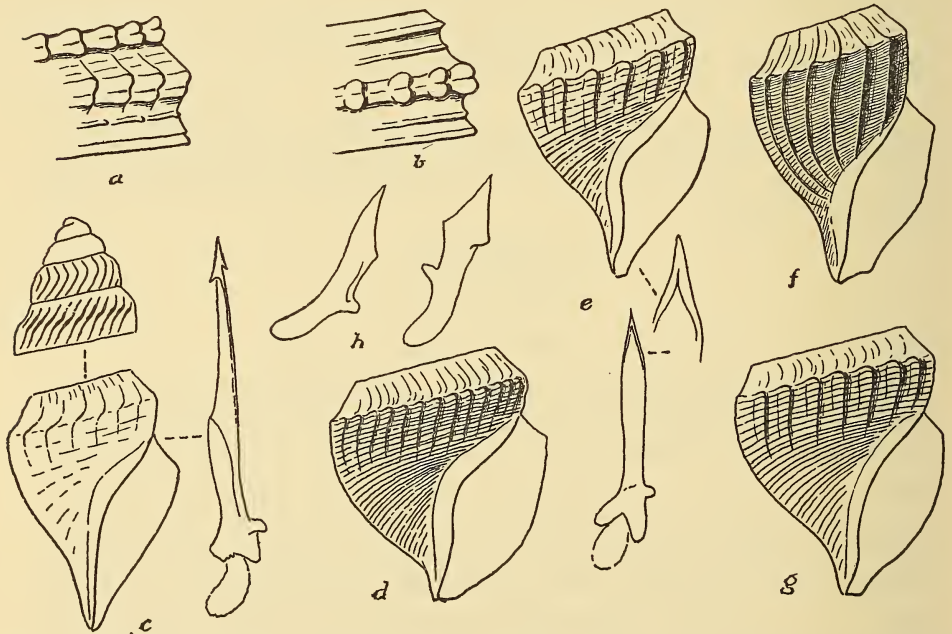


FIG. 2. a, *Clavatula lobatopsis* n. sp. Sculpture for comparison with b. b, *Turris lobata* (Sow.). Sculpture. c, *Typhlosyrinx pyrropelex* n. sp. Protoconch and base; radula tooth. d, *Cythara* (?) *glaucocreas* n. sp. e, *Daphnella* (?) *verecunda* n. sp. With radula tooth. Apex of latter further enlarged. f, *Mangilia* (?) sp. g, *Cythara* (?) *dagama* n. sp. h, two radula teeth.

tend to disappear, leaving only a continuous well-marked lira (or costa) at the lip sinus.

Lirae below the mid-whorl girdle as in *lobata*, but with no tendency to become costate and form a lobe on the outer lip; the lira next below the mid-whorl girdle may have small nodules.

Number of midwhorl tubercles 13-14 on 3rd whorl, increasing to 21-24 on 9th whorl. Towards the end of the last whorl the tubercles often tend to be feeble and irregular.

Among the specimens from Station A317 (S. Afr. Mus. A9800) was one with 12 midwhorl tubercles on the 3rd whorl, increasing to 14 on the last (8th) whorl. This can be regarded only as a casual variation.

Up to 40×14 mm. and 39×16 mm. (apices corroded).

Operculum oval, nucleus apical.

Animal pale. Eyes absent, or sometimes indicated by a minute brown or black speck. Radula with *c.* 70 rows, central plate narrow, acicular, extremely delicate, lateral plate with accessory appendage.

Cape Point NE. \times E. $\frac{1}{4}$ E. 46 miles, 900 fathoms, 1 living; N. 70° E. 40 miles, 800 fathoms, 2 dead; NE. \times E. $\frac{1}{4}$ E. 40 miles, 800-900 fathoms, 1 living, 3 dead (S. Afr. Mus. A1676-A1681, P.F. coll.).

$33^\circ 26' S.$, $16^\circ 33' E.$, 1,300 fathoms, 2 dead; $33^\circ 36' S.$, $16^\circ 15' E.$, 1,520-1,570 fathoms, 3 living (Types; $33^\circ 45\frac{1}{2}' S.$, $16^\circ 23\frac{1}{2}' E.$, 1,480 fathoms, 1 dead; $33^\circ 49' S.$, $16^\circ 30' E.$, 1,500 fathoms, 1 living, 1 dead (fresh); $34^\circ 37' S.$, $17^\circ 03' E.$, 1,580-1,620 fathoms, 2 living; $33^\circ 50' S.$, $16^\circ 30' E.$, 1,480-1,660 fathoms, 11 living; $33^\circ 52' S.$, $16^\circ 51' E.$, 1,380-1,520 fathoms; 2 living; $34^\circ 05' S.$, $16^\circ 58' E.$, 1,470-1,490 fathoms, 1 dead; $34^\circ 26' S.$, $17^\circ 00' E.$, 1,500 fathoms, 6 living, 3 dead (S. Afr. Mus. A9712, A9730 (Types), A9740, A9752, A9771, A9800, A9820, A9838, A9855; F. H. Talbot coll.).

Surcula scalaria Brnrd.

Surcula scalaria, Barnard, 1958, p. 146, fig. 22 d.

Like the *Pieter Faure* specimens, the present shells are dead; the generic position therefore remains uncertain.

$33^\circ 50' S.$, $17^\circ 21' E.$, 600 fathoms, 3 dead (S. Afr. Mus. A9695, F. H. Talbot coll.).

Subfam. **Brachytominae**

Moniliopsis psilarosis n. sp.

(Fig. 4 a)

Protoconch and ? 2 whorls missing. Remaining postnatal whorls 6. First 3 whorls (probably the 3rd-5th) distinctly but not strongly shouldered, profile of following whorls evenly convex. Oblique, protractive axial riblets 17-18 on first 2 whorls, 18-19 on 3rd whorl, forming small knobs at the shoulder, petering out below and scarcely reaching suture; becoming evanescent and obsolete on following whorls; crossed by impressed spiral striae 4 on first 2

whorls, 4-5 on 3rd, increasing to 8-9 on 4th, and *c.* 13 on last 2 whorls; sometimes 2-3 fine striae above the shoulder on the sulcus. Base with *c.* 24 (main and interpolated) spiral striae. Sulcus feebly concave, lip sinus moderately deep. Canal rather short and narrow. 47×16 mm. Operculum narrow oval, 13×5 mm. Drab or brownish, columella and interior of aperture dull pinkish; operculum amber.

Animal pale; eyes at base of short tentacles. Radula with 15 pairs of rather elongate, unbarbed teeth.

$34^{\circ} 42' S.$, $16^{\circ} 54' E.$, 1,725-1,780 fathoms, 1 living, 1 dead (fresh); $34^{\circ} 36' S.$, $17^{\circ} 00' E.$, 1,500-1,760 fathoms, 3 dead (worn and corroded) (S. Afr. Mus. A9789 (Types) and A9856; F. H. Talbot coll.).

Remarks. Seems to fit best into the genus *Moniliopsis*. The sculpture on the later whorls resembles a bare ploughed field.

The smallest worn specimen has lost the protoconch, but retains the first 2 postnatal whorls (corroded); the full complement of postnatal whorls would appear to be 8. The two largest specimens, corroded and comprising 4th-8th whorls, measure 51.5×19 mm. I have seen a larger one, comprising 3th-8th whorls, measuring 56×20 mm. (in coll. Fisheries Survey).

Typhlomangelia (?) *polythele* n. sp.

(Fig. 3 *e, f*)

Protoconch and ? 2 whorls corroded. Postnatal whorls $4\frac{1}{2}$; profile angularly shouldered a little above middle of whorl. Small peripheral knobs on the shoulder, *c.* 20 on 2nd whorl, *c.* 23 on 3rd, *c.* 26 on last whorl, evanescent towards outer lip, not continued below shoulder (or only very slightly); low flat spiral lirae 3-4 on 1st whorl, 4-5 on 2nd, 5-6 on 3rd, 7-8 on last whorl; 8-9 additional lirae on base, plus about the same number of finer lirae on rostrum. Sulcus scarcely concave, with a keel forming a distinct cingulum below the suture. Growth-lines distinct, especially on sulcus where they are subpliculose. Lip sinus deep, semicircular. 13×5.5 mm. Operculum oval, nucleus apical. White, operculum amber.

Animal pale. No eyes. Radula with 22 pairs of dagger-like, unbarbed teeth.

$33^{\circ} 50' S.$, $16^{\circ} 30' E.$, 1,480-1,660 fathoms, 2 living (S. Afr. Mus. A9802, F. H. Talbot coll.).

Remarks. Placed provisionally in *Typhlomangeia* although the radula teeth are not elongate as in *nivalis* (see Sars, 1878, pl. ix, fig. 10).

Subfam. **Cytharinae**

Cythara (?) *glaucocreas* n. sp.

(Fig. 2 *d*)

Protoconch corroded. Postnatal whorls 6, apical whorls more or less corroded; profile of whorls moderately convex, shoulder distinct, base rather

ventricose. Oblique axial ribs on penultimate and ultimate whorls 26-30, from shoulder to suture below, more or less traceable on base; spiral lirae 7-8 or 9 on sulcus; ribs crossed by 8-10 spiral lirae below shoulder, *c.* 20-24 on base (main and intermediaries). Growth-lines distinct across sulcus, often forming pliculae, nearly straight on upper half, curved when nearing the shoulder. Columella curved, canal wide, very short. 25.5 × 11.5 mm. and 21 × 11 mm. No operculum. White.

Animal greenish, no eyes, Radula with 21 pairs of short dagger-like, unbarbed teeth (similar to those of *D. verecunda*, see fig. 2*e*).

33° 49' S., 16° 30' E., 1,500 fathoms, 2 living; 34° 37' S., 17° 03' E., 1,580-1,620 fathoms, 1 dead (extracted from an anemone); 33° 52' S., 16° 51' E., 1,380-1,520 fathoms, 1 living (Type) and 2 dead (S. Afr. Mus. A9753, A9773, A9821 (Type), A9824; F. H. Talbot coll.).

Remarks. Belongs to one of the Cytharine genera and is provisionally placed in *Cythara*.

Cythara (?) *dagama* n. sp.

(Fig. 2 *g, h*)

Protoconch corroded. Profile of whorls convex, shoulder not prominent owing to corrosion, except in the smallest (6-whorled) shell. Postnatal whorls 8. Oblique axial ribs 14 on 3rd whorl, 16 on 4th, 16-17 on 5th, 19 on 6th, 20-22 on 7th, but becoming obscure towards end of whorl, ribs on 8th whorl (only one shell) uncountable owing to corrosion, from shoulder to suture below, evanescent on base; 5-7 spiral lirae on sulcus (chiefly on lower part), obscure on later whorls; ribs crossed by 6-7 lirae between shoulder and suture on 4th and 5th whorls, 7-8 on 6th, 8-9 (10) on 7th whorl (? 10-11 on 8th whorl, corroded), 12-15 on base, lirae regular, without intermediaries except one or two on base. Growth-lines forming a nearly even curve on the sulcus, slightly pliculose on earlier whorls. Columella curved, canal short, moderately wide. 38 × 16.5 mm.; 34 × 15 mm.; 30 × 13 mm.; 23 × 11 mm. White. No operculum.

Animal pale. Tentacles short, no eyes. Radula with 20 pairs of dagger-like teeth, proximally not divided, a short process on inner margin slightly nearer to base than to apex, distally expanded with short lateral tangs, but not barbed.

33° 36' S., 16° 15' E., 1,520-1,570 fathoms, 5 living (Types); 33° 45½' S., 16° 23½' E., 1,480 fathoms, 3 dead; 34° 37' S., 17° 03' E., 1,580-1,620 fathoms, 1 dead; 33° 50' S., 16° 30' E., 1,480-1,660 fathoms, 5 dead, corroded; 34° 36' S., 17° 00' E., 1,500-1,760 fathoms, 1 living, 1 juv. dead (S. Afr. Mus. A9731 (Types), A9741, A9772, A9806, A9860; F. H. Talbot coll.).

Typhlosyrinx pyrropellex n. sp.

(Fig. 2 *c*)

Pleurotoma (*Surcula*) *dissimilis* (non Watson). Barnard, 1958, p. 147, fig. 23 *a* (protoconch).

Shell smooth, polished. Protoconch 3½-4 whorls, last 2 or 3 whorls with regular oblique (protractive) pliculae, becoming slightly sigmoid near junction

with 1st postnatal whorl. Postnatal whorls $6\frac{1}{2}$ (7); profile convex, with slight shoulder. Growth-lines strongly sigmoid, irregularly pliculose near the suture, becoming strongly protractive (nearly horizontal) on the shoulder, and forming in some specimens obscure rounded axial ribs below shoulder on 3rd and 4th whorls, *c.* 14 on 4th whorl, best seen as marginal undulations in apical view. Fine indistinct spiral striae below shoulder, *c.* 5-6 on 2nd whorl, 7-8 on 3rd, 8-9 on 4th, increasing to *c.* 25 on 7th whorl, on base 25-30 on 4th whorl, 50-66 on 7th. Juveniles: up to 22.5×9 mm. (4 whorls). Creamy-white, glossy, protoconch fulvous brown. No operculum.

Animal pale; eyes represented by a minute pigment speck or absent. Radula (juveniles) with 25-30 pairs of slender doubly-barbed teeth, with a projecting knob proximally.

Cape Point N. 77° E. 650-700 fathoms, 2 dead; NE. \times E. $\frac{1}{2}$ E. 43 miles, 900 fathoms, 2 dead; NE. \times E. $\frac{3}{4}$ E. 38 miles, 750-800 fathoms, 1 dead (S. Afr. Mus. (Types) A1643, A1644, A1645; P.F. coll.).

$33^\circ 36'$ S., $16^\circ 15'$ E., 1,520-1,570 fathoms, 1 living, 1 dead; $33^\circ 50'$ S., $16^\circ 30'$ E., 1,480-1,660 fathoms, 6 dead; $33^\circ 52'$ S., $16^\circ 51'$ E., 1,380-1,520 fathoms, 2 dead; $34^\circ 05'$ S., $16^\circ 58'$ E., 1,470-1,490 fathoms, 1 dead; $34^\circ 36'$ S., $17^\circ 00'$ E., 1,500-1,760 fathoms, 3 living (S. Afr. Mus. A9732, A9805, A9823, A9839, A9858; F. H. Talbot coll.).

Remarks. The radula corresponds with that of *T. vepallida* von Martens (see: Thiele, 1903, pl. 9, fig. 74; and 1929, fig. 450) and the species may be provisionally included in *Typhlosyrinx*.

The shells obtained by Dr. Talbot are evidently juveniles of the same species as was obtained farther to the south-east by the *Pieter Faure*. In 1958 I was in two minds whether to refer the Cape shells to the Philippine *dissimilis* or the Cape Verde *alberti*. I now consider that slight differences in shape are unimportant, but that, on the other hand, the strong protractive bend in the growth-lines is sufficient to distinguish the Cape shells from both the other

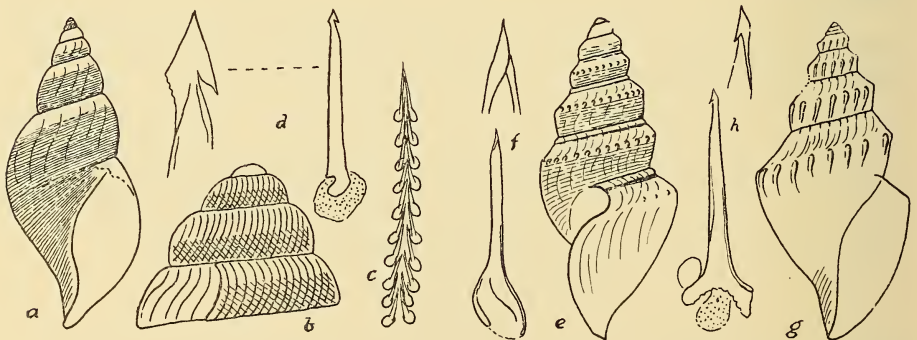


FIG. 3. *a*, *Typhlosyrinx subrosea* n. sp. *b*, protoconch. *c*, radula as arranged in radula sac. *d*, radula tooth, with apex further enlarged. *e*, *Typhlomangelia polythele* n. sp. *f*, radula tooth, with apex further enlarged. *g*, *Typhlosyrinx chrysopelex* n. sp. *h*, radula tooth, with apex further enlarged.

species. The protoconch was missing in *dissimilis*, and though present in the living example of *alberti*, was not stated to be coloured.

Several species with coloured (brown or yellow) protoconchs on a white shell have been described (see: Dautzenberg, 1927), mostly assigned to 'Pleurotoma'.

The *Pieter Faure* shells are regarded as Types of the adult. One of the shells of S. Afr. Mus. A1643 was sent to Tomlin, and presumably remains in his collection. The specimens S. Afr. Mus. A9858, from the largest of which the radula was extracted, may be regarded as Types of the juvenile and radula.

In the 1958 description (p. 147), for protoconch 'lip', read 'tip'.

Typhlosyrinx chrysoplex n. sp.

(Fig. 3 g)

Protoconch 3 whorls, somewhat worn, whorls pliculose, cancellate on lower half. Postnatal whorls $4\frac{1}{2}$, profile shouldered slightly above middle of whorl. Slightly oblique axial ribs from shoulder to suture, petering out on base, 13 on 1st whorl, 15 on 2nd, 16 on 3rd, and 19 on last whorl. No spiral sculpturing, except 12-15 feeble lirae on rostrum. Sulcus slightly concave, lip sinus shallow. Growth-lines distinct on sulcus, some of them pliculose below the suture. 19×9 mm. No operculum. White, glossy, protoconch yellowish-brown (faded).

Animal pale, eyes present. Radula with 25 pairs of dagger-like, barbed and flanged teeth, base broad and concave.

$34^{\circ} 36' S.$, $17^{\circ} 00' E.$, 1,500-1,760 fathoms, 1 living (S. Afr. Mus. A9857, F. H. Talbot coll.).

Remarks. Also placed provisionally in *Typhlosyrinx*.

Typhlosyrinx subrosea n. sp.

(Fig. 3 a-d)

Thin-shelled. Protoconch $3\frac{1}{2}$ -4 whorls, with (except 1st) oblique (protractive) pliculae, crossed below the periphery by retractive pliculae, producing a micro-clathrate sculpture. Postnatal whorls $4\frac{1}{2}$, profile evenly convex, the sulcus not concave, scarcely distinguishable from rest of profile. No axial sculpture except the growth-lines, which are sigmoid but not very concave across the sulcus. Impressed spiral striae scarcely indicated on 1st and 2nd whorls, but becoming distinct near end of 2nd whorl, *c.* 16 on 2nd-3rd, *c.* 20 on 3rd-4th, *c.* 24 on 4th whorl, with 2-4 additional finer ones on the sulcus above the 'shoulder'. On base at least 36 striae, extending to end of rostrum. Columella curved, canal rather short and narrow. In the larger living shell no columellar callus concealing the spiral striae; in the smaller dead shell a weak callus partly concealing the striae, especially on the rostrum. 36×16 mm. No operculum. Very pale translucent pink, protoconch golden-brown.

Animal pale, no eyes. Radula with 10 pairs of rather short, dagger-like teeth, apically barbed and flanged.

33° 52' S., 16° 51' E., 1,380–1,520 fathoms, 1 living, 1 dead (S. Afr. Mus. A9822, F. H. Talbot coll.).

Remarks. Somewhat similar to the shells described as *pyrropelex*, but the sulcus not so distinct and the columella more curved.

Philbertia cala (Watson)

(Fig. 4 *b–e*)

Clathurella cala Watson, 1886, p. 361, pl. 26, fig. 11.

Protoconch $3\frac{1}{2}$ whorls, last $2\frac{1}{2}$ with fine oblique protractive pliculae, and on the lower half of the whorl oblique retractive pliculae between the protractive ones, giving a faint cancellate or granulate sculpture. Postnatal whorls $5\frac{1}{2}$, profile strongly convex, shoulder well marked but rounded (Watson: 'hunchy'). Oblique protractive axial riblets 12 on 1st whorl, increasing to 18

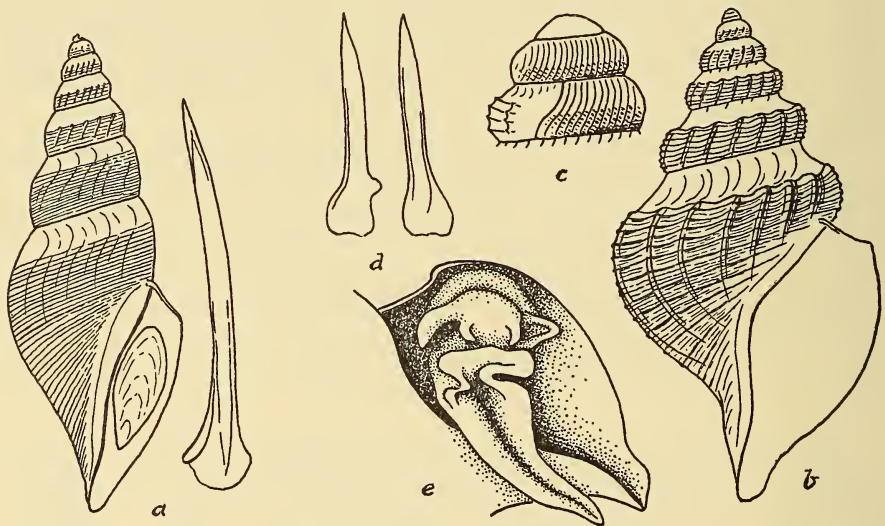


FIG. 4. *a*, *Moniliopsis psilaropsis* n. sp. with radula tooth. *b*, *Philbertia cala* (Watson). *c*, protoconch. *d*, two views of radula tooth. *e*, aperture with animal, as preserved, showing grooved foot.

on last, on the early whorls traceable across the sulcus, but not on the last 2 (or 3) whorls, continued across base; crossed by fine spiral lirae 4 on 1st whorl, 5 on 2nd, 5–6 on 3rd, 8 on 4th and 10 on last whorl (6–7 main lirae plus intermediaries). On base 6–7 main lirae plus intermediaries, but on rostrum lirae subequal. Sulcus concave, lip sinus rather deep. 19 × 10 mm. No operculum. White, protoconch chestnut-brown.

Animal pale, no eyes. Radula with 20–25 pairs of short, dagger-like, unbarbed teeth.

34° 42' S., 16° 54' E., 1,725–1,780 fathoms, 3 living (S. Afr. Mus. A9790, F. H. Talbot coll.).

Distribution. South Atlantic: 32° 24' S., 13° 5' W., 1,425 fathoms (Watson).

Remarks. These specimens agree so well with Watson's description that the identification seems certain. There are only two points to note: the largest of the present specimens is 19 mm. long with 5½ whorls, the *Challenger* shell only 0.55 inches with the same number of whorls; and the Cape shells have 2–3 ribs more than the *Challenger* shell. These differences seem insignificant as against the essential similarities.

One of the present specimens with 4 postnatal whorls has all the lirae on the 3rd and 4th whorls subequal, not divided into main and intermediaries.

In all three specimens the elongate grooved tongue-like foot has not been withdrawn within the aperture. This reaction to the preservative seems to be peculiar to this species, because it has not occurred in any of the other Turritid specimens in the present collection, all of which were preserved in the same manner. In the latter the foot is contracted into a compact mass and withdrawn within the aperture.

Comparable (conchologically) species in deep water off the New England coast seem to be *Pleurotomella saffordi* V. & S. and *benedicti* V. & S., 1884.

Mangilia (?) sp.

(Fig. 2 f)

Protoconch corroded. Profile of whorls convex, with a slight shoulder. Postnatal whorls 5. Oblique axial ribs 14 on 3rd whorl, increasing to 16 on 5th whorl, crossing the sulcus, and also base; *c.* 15 spiral lirae between shoulder and suture on 3rd whorl, crossing the ribs, increasing to at least 20 on 5th whorl; on base at least 30 lirae. Growth-lines forming an even curve on sulcus, those which are continued as axial ribs stronger than the others. Lip sinus moderately deep. Columella slightly curved, canal short, rather wide. 15 × 6.5 mm. White.

33° 50' S., 17° 21' E., 600 fathoms, 1 dead (S. Afr. Mus. A9696, F. H. Talbot coll.).

Three specimens resemble the above described shell, but have 20 axial ribs on the last whorl.

34° 37' S., 17° 03' E., 1,580–1,620 fathoms, 1 dead; 33° 50' S., 16° 30' E., 1,480–1,660 fathoms, 2 dead (S. Afr. Mus. A9775, A9803; F. H. Talbot coll.).

Daphnella (?) *verecunda* n. sp.

(Fig. 2 e)

Protoconch corroded. Profile of whorls angular. Postnatal whorls 7. Oblique axial ribs 12–13 on 4th and 5th whorls, 14–15 on 6th and 7th, from

shoulder to suture, evanescent on base; crossed by 6-7 spiral lirae on 4th and 5th whorls, 7-8 on 6th and 7th, *c.* 15 on base, including on the latter some intermediaries; no spiral lirae on sulcus, or only extremely faint ones visible in places. Growth-lines forming a nearly even curve on sulcus, without pliculae. Columella curved, canal short, moderately wide. 22×10.5 mm. White, middle portion of columella with faint salmon flush. No operculum.

Animal pale. Tentacles short, no eyes. Radula with *c.* 25 pairs of dagger-like teeth, proximally bifid, enclosing the poison gland, a short process on inner side proximally, apex sharply pointed, not barbed.

$33^{\circ} 50' S.$, $17^{\circ} 21' E.$, 600 fathoms, 2 living, 1 dead (S. Afr. Mus. A9697, F. H. Talbot coll.).

Remarks. Differs from *Surcula sulcancellata* Brnrd. 1958 in having fewer ribs and no sculpturing on the sulcus.

The radula teeth have some similarity with those figured by Thiele (1929, fig. 456) for a species of *Daphnella*.

Daphnella (?) *bitrudis* n. sp.

(Fig. 1 b)

Very narrow fusiform. Point of protoconch broken, and apical whorls corroded; 7 postnatal whorls remaining. Profile of whorls evenly convex, no shoulder. Growth-lines for the most part distinct, somewhat variable but not forming axial ribs, strongly protractive on sulcus before passing over on to whorl. Fine spiral lirae 4 on 4th whorl, 6 on 5th, 8-9 on 6th and 10 on 7th, on base *c.* 15 additional lirae but not well defined on rostrum. Columella sinuous, canal long, narrow. 15×3.5 mm. White, glossy except where corroded.

$33^{\circ} 49' S.$, $16^{\circ} 30' E.$, 1,500 fathoms, 2 dead, but fresh (S. Afr. Mus. A9754, F. H. Talbot coll.).

Remarks. May be compared with *Mangilia scipio* Dall (1889, p. 117, pl. 10, fig. 12) from the West Indies, 124 and 982 fathoms; and *Clathurella* (*Daphnella*) *monoceros* Watson (1886, p. 365, pl. 20, fig. 1) from off Sierra Leone, 2,500 fathoms.

The genus is quite provisional; perhaps the species might fit into *Spergo*, but the suggestion is made without much confidence.

One of the most slender of the Turritids, being slightly more slender than *Pleurotoma torta* Dautzenberg (1912, p. 11, pl. 1, figs. 3, 4).

Gymnobela sp.

Two dead specimens, 9.5×6.5 mm. and 13×8 mm., closely resemble the figures of *G. blakeana* Dall 1889 and *G. rhomboidea* Thiele 1925, but the axial ribs are obsolete while the growth-line pliculae across the sulcus are distinct.

Although in fair condition, it is preferable to wait for more material, with the animal, before describing these shells.

33° 50' S., 17° 21' E., 600 fathoms, 1 dead; 33° 50' S., 16° 30' E., 1,480–1,660 fathoms, 1 dead (S. Afr. Mus. Ag698 and Ag804, F. H. Talbot coll.).

Gen. ?

Somewhat resembling *Pleurotomella lottae* Verrill 1885, from the New England coast, 1,525 fathoms, but narrower and less ventricose. Five to six whorls, profile convex. Sulcus ?, not clearly marked. No axial sculpture. Spiral lirae over greater part of whorl, *c.* 10, finer above and encroaching on the 'sulcus'. Growth-lines sigmoid, more or less pliculose below suture, especially on early whorls. 11.5 × 7, 13 × 7.5 and 14 × 8 mm. White.

33° 50' S., 16° 30' E., 1,480–1,660 fathoms, 1 dead; 34° 05' S., 16° 58' E., 1,470–1,490 fathoms, 2 dead (S. Afr. Mus. Ag807, Ag840, F. H. Talbot coll.).

Cancellariidae

Cancellaria euthymei Brnrd.

Cancellaria euthymei Barnard, 1960c, p. 438, fig. 1 b.

34° 36' S., 17° 00' E., 1,500–1,760 fathoms, 1 living (S. Afr. Mus. Ag888, F. H. Talbot coll.).

Admete decapensis Brnrd.

Admete decapensis Barnard, 1960c, p. 439, fig. 1 a.

34° 37' S., 17° 03' E., 1,580–1,620 fathoms, 1 living (S. Afr. Mus. Ag777, F. H. Talbot coll.).

Since the above description was published, a second specimen has been found among the Fisheries Survey collections. Presumably it is from the same locality as the Type. It is of the same size as the Type. The columellar pleats are slightly more prominent; and posterior to the upper one is a pair of small narrow pleats close together.

Type and second specimen in the South African Museum.

Volutidae

Guivillea alabastrina (Watson)

(Fig. 5)

Wyvillea alabastrina Watson, 1882, p. 332.

Guivillea alabastrina (Watson), Watson, 1886, p. 262, pl. 15, fig. 2. Pelseneer, 1888, p. 3, pl. 1, figs. 1, 2 (animal). Melvill & Standen, 1907, p. 140. Barnard, 1960a, p. 398. South African Museum Report, 1961, pl. 4, fig. C.

Four worn and broken specimens were obtained. An apex consisting of protoconch plus 2 whorls; a portion of a very worn columella, identifiable by comparison with the following specimen; a protoconch plus 2½ whorls, length 77 mm.; and a protoconch plus 2¾ whorls, length 90 mm., together with fragments.

The protoconch agrees with Watson's description. Its extent is uncertain owing to corrosion of the surface, but $1\frac{1}{2}$ (possibly 2) whorls would seem a reasonable estimate.

The columella (pillar), however, has no kink as has the *Challenger* shell, and it has a very slight groove, visible on the 77 and 90 mm. apices, but disappearing on the basal part of the columella as seen in the fragments.

The canal is not so markedly truncate as the figure of the *Challenger* shell would seem to suggest, even when seen in approximately the same position. Perhaps the edge of the canal was broken, but drawn by the artist as if unbroken.

The fragments from the same haul as the 90 mm. apex include: a portion of the outer wall of the shell with sutural inflexion, which does not fit on to the

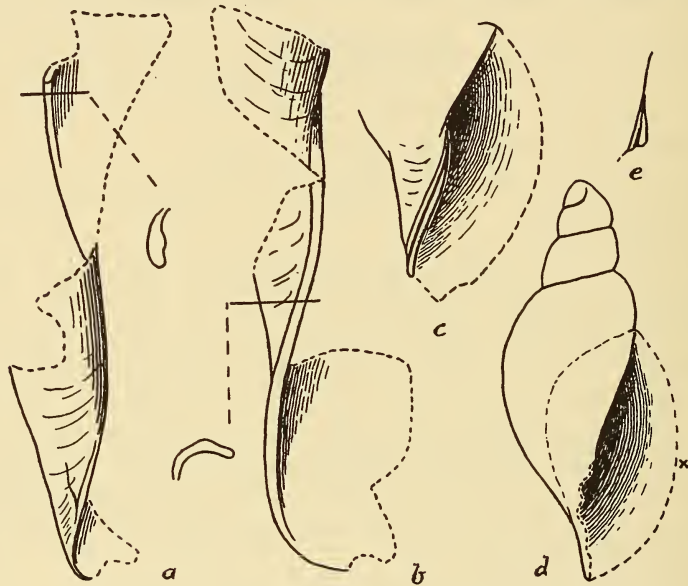


FIG. 5. *Guivillea alabastrina* (Watson). *a, b*, two views of columella, with (slightly enlarged) sections. *c*, aperture of last whorl of specimen (protoconch + $2\frac{3}{4}$ whorls), showing grooved columella. *d*, specimen Ag841 with, *e*, view of broken end of columella at a point opposite *x*, at right angles to frontal view. (All figures about $\frac{5}{7}$ natural size.)

apex as far as the latter is preserved; the canal with adjacent columella (pillar) to the upper end of which another fragment of columella appears to join (the opposed surfaces are not large enough to form an undeniable 'fit').

There is some doubt whether the 90 mm. apex and the columella fragments belong to one or two shells.

Dr. Talbot tells me that the contents of the dredge when it came aboard formed such a compact mass of globigerina ooze that the extraction of the animals was difficult. Nevertheless he thinks that if a second shell (apex) had been present it would not have been overlooked.

If the apex and the columella are placed end to end in their correct relative position, and without allowance for the probable loss of small intervening pieces, the shell would be at least $7\frac{1}{2}$ inches long; the *Challenger* shell was $6\frac{1}{2}$ inches long, and the species may well grow an inch larger.

$34^{\circ} 37' S.$, $17^{\circ} 03' E.$, 1,580–1,620 fathoms, 1 protoconch plus 2 whorls; $33^{\circ} 50' S.$, $16^{\circ} 30' E.$, 1,480–1,660 fathoms, 1 columella (worn); $34^{\circ} 05' S.$, $16^{\circ} 58' E.$, 1,470–1,490 fathoms, 1 protoconch plus $2\frac{1}{2}$ whorls; $34^{\circ} 36' S.$, $17^{\circ} 00' E.$, 1,500–1,760 fathoms, 1 protoconch plus $2\frac{3}{4}$ whorls, and fragments (S. Afr. Mus. A9776, A9809, A9841, and A9870; F. H. Talbot coll.).

Distribution. Between Marion Island and the Crozets, $46^{\circ} 16' S.$, $48^{\circ} 27' E.$, 1,600 fathoms (Watson: *Challenger*); South Orkneys (Melville & Standen: *Scotia*).

Remarks. This is the most interesting of the results of Dr. Talbot's deep-sea dredging.

Watson gave only a general description of the external appearance of the *Challenger* animal. In 1882 he said that Prof. Huxley had undertaken the detailed description of the anatomy, and in 1886 he said the description would appear elsewhere (i.e. not in his *Challenger* Report). I have not been able to trace any description by Huxley.

The animal, however, was submitted to Pelseener, and a brief account appeared in a later volume of the *Challenger* Reports (Pelseener, 1888, p. 3, pl. 1, figs. 1, 2). Pelseener figured the foot and cephalic region from the right side, but undertook no dissection or anatomical investigation except to remove and section one of the rudimentary unpigmented eyes (Thiele, 1929, repeated Watson's statement that eyes were absent).

Possibly, therefore, the radula is still within the remains of the animal. Mr. Dance (in litt. 2 Febr. 1960) told me that the animal was intact in the British Museum. Can no one be found to extract the radula and confirm, or otherwise, the animal's position in the *Volutidae*?

Fasciolaridae?

Gen. ?

Two broken and corroded shells, one 30 mm. long, the other 23×10 mm., extracted from anemones. Whorls preserved: 5 and 4 respectively. Aperture (incl. canal) about $1\frac{1}{2}$ times the spire. Profile evenly convex, but possibly with a slight midwhorl shoulder. No sulcus. Columella slightly curved, no pleats; canal well marked. No axial sculpture; spiral lirae on last whorl (4th) of smaller shell 12–13, regular, subequal; on 5th whorl of larger shell 12 on upper half, 6 on lower half of whorl. Although the numbers of lirae on the two shells differ in number and strength, they cover the whorl completely between upper and lower sutures. On base (of smaller shell) 12 lirae plus *c.* 8 on rostrum.

$34^{\circ} 37' S.$, $17^{\circ} 03' E.$, 1,580–1,620 fathoms, 2 dead (S. Afr. Mus. A9774, F. H. Talbot coll.).

Mitridae

Gen. CHARITODORON Tomlin

Barnard, 1960b, p. 402.

Examination of the living material brought up by Dr. Talbot's dredging has resulted in transferring this genus from the *Buccinidae* to the *Mitridae*.

Fam. ?*Nux alabaster* Brnrd.*Nux alabaster* Barnard, 1960c, p. 440, fig. 2.

The radula of this curious species indicates one of the Rhachiglossate families, but its exact systematic position remains doubtful.

Mr. A. E. Salisbury (in litt. 20 June 1961) has drawn my attention to the previous use of the generic name *Nux*, viz.: Humphrey, *Mus. Callonianum*, 1797, p. 59. This work was arbitrarily rejected by the International Committee (Opinion 51). But a future International Committee may, also arbitrarily, reverse this opinion. The name is in Sherborn's *Index Animalium* 1758-1800, but not in Neave's *Nomenclator*. For the time being I maintain the name.

Buccinidae*Neptunea bonae-spei* n. sp.

(Fig. 6 a, b)

Protoconch $2\frac{1}{2}$ whorls, smooth, but corroded and junction with 1st post-natal whorl indistinct. Postnatal whorls 6; profile of whorls evenly convex. Axial ribs *c.* 15 on 1st whorl (but slightly corroded), 16 on 2nd, 18 on 3rd, 20 on 4th, 22 on 5th, and 26 on 6th whorl, straight or slightly retractive, from suture to suture, obsolete on base; crossed by spiral lirae 5 or 6 on 1st, 7-8 on 2nd, 8 on 3rd and 4th, 10 plus intermediaries on last two whorls, *c.* 24 on base. Canal short, rather wide. 55×26 mm. and 51×27 mm. Operculum ovate, nucleus apical, 14×9 mm. Creamy-white with pale buff, thin, somewhat scabrous periostracum; operculum amber-brown.

Animal pale. Eyes well developed. Radula with 80-85 rows, central plate quadrangular, with median cusp, sometimes a minute denticle on one side or on both sides; lateral plate much stronger than central plate, unequally bicuspid, with 2-5 tiny denticles between the two cusps, the denticles not always symmetrical.

$33^{\circ} 49' S.$, $16^{\circ} 30' E.$, 1,500 fathoms, 1 living; $33^{\circ} 52' S.$, $16^{\circ} 51' E.$, 1,380-1,520 fathoms, 2 living (Types), 2 dead; $34^{\circ} 36' S.$, $17^{\circ} 00' E.$, 1,500-1,760 fathoms, 1 living (S. Afr. Mus. A9757, A9826 (Types), and A9887, F. H. Talbot coll.).

Remarks. The assignation of this Cape species to the old boreal genus *Neptunea* may seem strange; it is admittedly somewhat unsatisfactory, but it is an alternative to instituting a new genus.

The shell is an ordinary-looking Buccinid, but the radula has unusual features.

The central plate resembles that of *Mohnia* (see Thiele, 1929, fig. 342), *Chauvetia* (*Lachesis*) (see Thiele, 1929, fig. 357), some species of *Sipho* (e.g. *islandicus*, *gracilis*, *glaber*) (see Sars, 1878, pl. x, figs. 19, 20, 21), and *Lachesis australis* von Martens (= *albozonata* Watson) (see Thiele, 1903, pl. 9, fig. 55; also Powell, 1951, fig. K 59).*

On the other hand the lateral plate agrees with that of none of these genera, but closely resembles that of *Chrysodomus turtoni* (see Sars, 1878, pl. x, fig. 16). Thiele (1929) puts *Chrysodomus* as a synonym of *Neptunea*, but does not mention a particular species as its representative. The length of the outer cusp and shortness of the inner cusp give the lateral plate of *C. turtoni* and *Neptunea bonae-spei* a distinctive shape. (The central plate of *C. turtoni* has no cusp.)

The specimen from 34° 36' S., 17° E. (A9887), is more slender than the other specimens; the axial ribs are evanescent on the last whorl, and obsolete on the back of the outer lip.

I have been shown a 7-whorled specimen (in coll. Fisheries Survey) 62 × 30 mm. On the 7th whorl the axial ribs are obsolete.

Prosipho torquatus n. sp.

(Fig. 6 c, d, e)

Protoconch 1½ whorls, alt. and diam. 1 mm. Postnatal whorls 4; profile of whorls angularly shouldered, but not sharply, a little above middle of whorl. Axial ribs on 1st whorl (partly corroded) 16, on each of the following whorls 17-18, from shoulder to suture, and extending across base; crossed by spiral lirae 3-4 on 2nd whorl, 5-7 on 3rd, 8-9 on 4th whorl; small granules on the intersections, those on the shoulder slightly larger than the others; 15 additional lirae on base. Below the suture a circlet of granules, about twice as many as the axial ribs. 15.5 × 7 mm. Operculum 4 × 2 mm., ovate, nucleus apical. Dirty white, operculum pale amber.

Radula with 75 rows, central plate excised in front, with 3 cusps, lateral plate strong, twice as long as the central plate, with 2 apical cusps.

34° 37' S., 17° 03' E., 1,580-1,620 fathoms, 1 living (Type); 33° 50' S., 16° 30' E., 1,480-1,660 fathoms, 1 dead; 34° 36' S., 17° 00' E., 1,500-1,760 fathoms, 1 dead (S. Afr. Mus. A9884, A9801 and A9886 respectively; F. H. Talbot coll.).

Remarks. *P. astrolabiensis* (Strebel) seems to be the only other species with a bicuspid lateral radula plate, the others having more than two (3-6). The shape

*For the last-mentioned species, from Kerguelen, Powell (1951) proposed the generic name *Falsimohnia*.

of the lateral plate, however, in the present species is different from that of *astrolabiensis* as figured by Powell (1951, fig. K 56). When mounting the radula some of the lateral plates were purposely displaced into various positions, but none of them assumed the shape shown in Powell's figure.

The shell of *astrolabiensis* is quite different from the present shell.

This record forms a noteworthy extension of the known distribution of this Antarctic and sub-Antarctic genus.



FIG. 6. *a*, *Neptunea bonae-spei* n. sp. *b*, central and lateral plates of radula. *c*, *Prosipho torquatus* n. sp. *d*, two views of protoconch. *e*, central and lateral plates of radula.

Pyrenidae

Pyrene cf. *profundi* (Dall)

Astyris profundus Dall, 1889, p. 192, pl. 35, fig. 3.

Columella (Astyris) profundus Dautzenberg, 1927, p. 89.

Protoconch nucleus diam. 0.25 mm., plus 7 whorls. Profile of whorls slightly convex. Spire longer than aperture. Surface smooth, without any sculpture, the growth-lines for the most part very indistinct; but a few spiral lirae on rostrum. Outer lip sometimes with feeble varicoid thickening; no plicae on inner surface. No periostracum. 11 × 5 mm. Operculum subtriangularly ovoid, thickened on inner surface in basal half (i.e. from nucleus onwards), the thickening extending along both lateral margins and also forming a midrib, leaving a semi-oval thinner area between the latter and the margins; midrib not (or scarcely) visible on external surface. White, operculum amber.

Radula normal, proximal cusp on lateral plate well separated from the bifurcate apex.

34° 36' S., 17° 00' E., 1,500–1,760 fathoms, 8 living, 9 dead; 33° 49' S., 16° 30' E., 1,500 fathoms, 1 dead (S. Afr. Mus. A9864 and A9758 respectively; F. H. Talbot coll.).

Remarks. A perfectly plain, smooth and slightly glossy species, comparable with both *Astyris diaphana* Verrill from off east coast of North America and with *A. profundus* Dall from the same region and also the Azores and Cape Verde; but intermediate between the two in proportions.

The appearance of a trident on the internal surface of the operculum is not distinctive, because it occurs in *P. filmerae* and in *Columbella fulgurans*.

Muricidae

Trophon acceptans Brnrd.

(Fig. 7 a)

Trophon acceptans [partim] Barnard, 1959, p. 202, figs. 40 d (radula), 43 b (only the fig. of adult) (only the adults A3449, A3473 and A3480).

33° 50' S., 17° 21' E., 600 fathoms, 4 living, 7 dead; 33° 36' S., 16° 15' E., 1,520–1,570 fathoms, 9 living, 2 dead; 33° 45½' S., 16° 23½' E., 1,480 fathoms, 2 living; 33° 49' S., 16° 30' E., 1,500 fathoms, 8 living, 1 dead; 34° 37' S., 17° 03' E., 1,580–1,620 fathoms, 4 living, 1 dead; 34° 42' S., 16° 54' E., 1,725–1,780 fathoms, 2 living, 2 dead; 33° 50' S., 16° 30' E., 1,480–1,660 fathoms, 10 living; 34° 05' S., 16° 58' E., 1,470–1,490 fathoms, 2 living; 34° 36' S., 17° 00' E., 1,500–1,760 fathoms, 3 dead (S. Afr. Mus. A9701, A9734, A9743, A9759, A9778, A9791, A9811, A9842, A9865; F. H. Talbot coll.).

The new material comprises 56 specimens ranging from 10 to 46 mm. in length, most of them living.

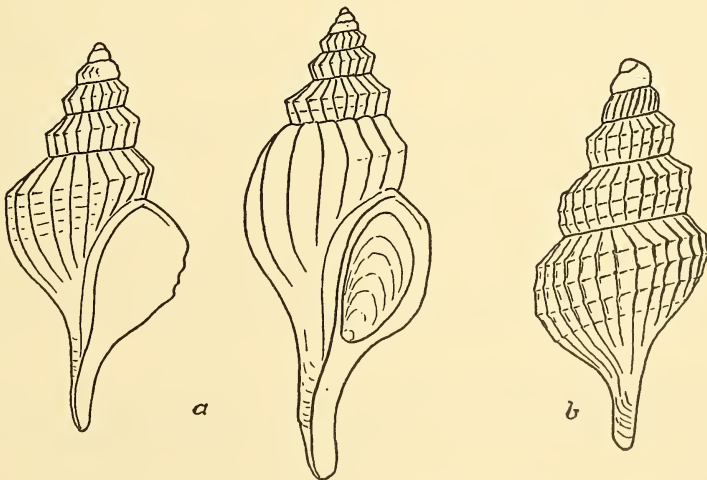


FIG. 7. a, *Trophon acceptans* Brnrd., multicostate variations. b, *Trophon* cf. *droueti* Dautzenberg.

In the original description were included some juveniles, 3.5 to 8 mm., which appeared to be conspecific with the adults, the smallest of the latter being 18 mm. in length. I am now inclined to think this was an error, and that not enough importance was attached to the position of the shoulder. There is, in fact, in these juveniles no *angular* shoulder, and the highest part of the profile of the ribs is at, or nearly at, a level with the suture (see figs. of juv.). The recently obtained 10 mm. specimen shows, although the apex is corroded, that there is a definite angular shoulder from at least the 2nd (postnatal) whorl onwards. Therefore the juveniles from the Agulhas Bank, Algoa Bay and East London are now excluded from *acceptans*, and considered as belonging to a separate species. This is best left without a name pending the discovery of further and better material.

The original description, omitting those characters which apply to the juveniles, may be emended and added to as follows: Postnatal whorls 7 (1st whorl corroded in all specimens); 2nd and following whorls angularly shouldered; axial ribs on 2nd and 3rd whorls 11-12, on 4th and 5th 12-13, on 6th and 7th 13-14, sharply keeled and slightly squamosely lamellate at the shoulder (when not worn or corroded); on the later whorls the intervals between the ribs become U-shaped, and when the ribs are far apart the intervals are very open and flat. The rostrum and canal may be slightly curved in the largest shells. A thin, pale brown periostracum, which usually comes away when the investing Epizoanthus is removed. Radula of large specimens with 125-135 rows.

Remarks. All the material collected by the *Pieter Faure* and Dr. Talbot came from the same area (see original description and the localities given above). The bathymetrical distribution is as follows:

At 630-800 fathoms 7 specimens 18-21 mm., somewhat corroded but clean, 1 of them living (*Pieter Faure*).

At 600 fathoms 11 specimens 10-22 mm., somewhat corroded but clean, 4 of them living.

At 1,480 fathoms 2 living specimens 31 and 35 mm., somewhat corroded, part of each shell covered with the beginning of a colony of purple *Epizoanthus* (Coelenterate), with one or two polyps.

At 1,470-1,490 fathoms 2 living, 22 and 25 mm., clean.

At 1,480-1,660 fathoms 10 living, with *Epizoanthus* colonies.

At 1,500 fathoms 9 specimens, 8 of them living, 21-45 mm., somewhat corroded, covered with *Epizoanthus* colonies, that on the largest shell with 7 polyps.

At 1,500-1,760 fathoms 2 dead.

At 1,520-1,570 fathoms 11 specimens, 9 of them living, 30-46 mm., somewhat corroded, covered with *Epizoanthus* colonies, with up to 10 polyps on a shell.

At 1,580-1,620 fathoms 5 specimens, 4 of them living, with *Epizoanthus* colonies, and 1 dead extracted from an anemone (Actinian).

At 1,725-1,780 fathoms 4 specimens, 2 of them living, 30 and 32 mm., clean.

No examples have been found in less than 600 fathoms, and all those obtained at this depth, and down to 800 fathoms, were not more than half-grown. The largest shells, and also half-grown (23 mm.) and three-quarter-grown shells were obtained at 1,480 fathoms and greater depths. The animals from lesser depths, though smaller, may nevertheless be sexually mature and represent a dwarf form. There is as yet no evidence on this point.

The purple Epizoanthus is found only at the greater depths, 1,480 fathoms onwards. It settles on half- or three-quarter-grown shells, and completely envelops the largest shells, including the whole ventral surface, though of course the polyps arise only dorsally and laterally. When the mollusc is withdrawn into its shell there is nothing to indicate that the object is other than a clump of polyps, distasteful to fishes (as many Coelenterates are known to be) and possibly also to predaceous molluscs or Echinoderms.

The original figure of the 'adult' will serve also for the larger shells, and represents the typical form; two figures are here given showing multicostate variations.

In the original description the one living specimen (S. Afr. Mus. A3473) was designated the Type. The new material contains specimens which, because they show the size to which it grows, are really *more typical* of the species (? hypertypes).

A resemblance to *tenuirostratus* Smith 1899 and 1901 was noted in the original description; but there is a considerably stronger resemblance to *obtuseliratus* Schepman 1911. These are resemblances between specimens from the Cape and from localities in the Indian Ocean and the East Indies.

A more serious question is the possible identity of the Cape shells with *guineensis* Thiele (1925, p. 169, pl. 30(18), fig. 11) from 2,278 metres in the Gulf of Guinea. Comparison of Thiele's figure and mine leaves little choice, and I fully expect that *acceptans* will *not* be accepted when further material is obtained from the Atlantic trough along the west coast of Africa. For the present the Cape shells are retained as a separate species.

Variation. The following examples I consider as no more than individual multicostate variations.

One (30 mm.) of the two examples from 1,480 fathoms has 16 ribs on the 5th, and 18 on the 6th whorl.

One (32 mm.) of the specimens from 1,500 fathoms has 15 ribs on the 3rd whorl, and 16 on the 4th, 5th and 6th whorls.

One (27 mm.) of the specimens from 1,500 fathoms has 16 ribs on the 3rd whorl, 18 on the 4th and 5th whorls, and 14 on the first three-quarters of the 6th whorl followed by 2 ribs widely separated.

One (46 mm.) of the specimens from 1,520-1,570 fathoms has 15 ribs on the 4th whorl, 17 on the 5th and 6th whorls, and 15 on the 7th whorl.

In the last-mentioned shell (46 mm.) the shoulder disappears on the last

(7th) whorl, and consequently the shell approximates in shape to the figure of *declinans* Watson, though the latter has no shoulder on any of the whorls.

Faint indications of 2 spiral lirae below the shoulder on the 6th whorl were noted in the original description. In these multicostate variations there are indications of 3 or even 4 such lirae.

Trophon cf. *droueti* Dautzbg.

(Fig. 7 b)

Trophon droueti Dautzenberg, 1889, p. 37, pl. 2, figs. 1 a, b, c (hand-drawn).

1927, p. 92, pl. 7, figs. 26-28 (photo).

Protoconch $1\frac{1}{2}$ whorls, alt. and diam. c. 1 mm. (slightly corroded). Post-natal whorls $3\frac{1}{2}$ -4, profile angularly shouldered, but shoulder becoming rounded on last whorl. Axial ribs 16-17 on 1st whorl, increasing to 24 on last, retractive from suture to shoulder, straight below, sharp, becoming distinctly lamellate on back of outer lip. On 2nd and 3rd whorls a feeble lira at the shoulder and another below it produce small nodules on the ribs; on last whorl 2 more lirae below the subperipheral one. 10-11.5 × 5 mm. White.

34° 36' S., 17° 00' E., 1,500-1,760 fathoms, 3 dead (S. Afr. Mus. Ag866, F. H. Talbot coll.).

Distribution. Azores, 1,287 metres.

Remarks. These shells are remarkably like *droueti*, and I deem it advisable not to institute a separate species for them, at least not until further material is available. They are slightly more slender (*droueti*: 8 × 4 mm.), thus possibly representing var. *elongata* Locard, 1897. The spiral lirae are very feeble, but sufficiently in relief to cast slight shadows, comparable with the grey bands in Dautzenberg's hand-drawn figures (1889).

Dautzenberg estimated from fragments that the species reached a size of 16 mm. The present specimens have a protoconch as large as that of *acceptans*, and the species may possibly reach a greater size than 16 mm. in the Cape area.

In Dautzenberg's fig. 1 b the number of riblets seems to be greater than would be expected.

Columbariidae

Columbarium rotundum Brnrd. and *angulare* Brnrd.

The localities from which specimens of these two species were obtained confirm the results obtained by the *Pieter Faure* (Barnard, 1959, pp. 235, 236). *C. rotundum* occurs in depths of 250-760 fathoms; but *angulare*, which the *Pieter Faure* obtained in depths of 720-900 fathoms, has now been shown to extend down to 1,520 fathoms.

Cymatiidae*Thalassocyon bonus* Brnrd.

Thalassocyon bonus Barnard, 1960c, p. 440, fig. 3.

Excepting *Guivillea*, this is the most interesting Mollusc obtained by Dr. Talbot. The shell resembles in shape a *Semifusus*, but the animal was found to have a taenioglossate radula similar to that of *Cymatium*.

Oöcorythidae*Oöcorys watsoni* Locard

Oöcorys sulcata (non Fischer) Watson, 1886, p. 412, pl. 17, fig. 11.

Oöcorys watsoni Locard, 1897, p. 288. Tomlin, 1927, p. 80. Barnard, 1963, p. 9.

Largest specimen 44 × 31 mm. Dead specimens were previously taken by the *Pieter Faure* off Cape Point in 720–1,000 fathoms.

Naticidae*Polynices cleistopsila* Brnrd.

Polynices cleistopsila Barnard, 1963, p. 64.

Falsilumatia pseudopsila Brnrd.

Falsilumatia pseudopsila Barnard, 1963, p. 64.

Pyramidellidae*Turbonilla* cf. *kraussi* Clessin

Turbonilla cf. *kraussi* Clessin, Barnard, 1963, p. 85.

Although closely similar to the littoral and shallow-water *kraussi*, the single dead specimen will probably prove to be a distinct species when more material is obtained.

Cerithiopsidae*Cerithiella taylori* Brnrd.

Cerithiella taylori Barnard, 1963, p. 126.

Lamellariidae*Lamellaria capensis* (Bergh)

Lamellaria capensis Bergh, Barnard, 1963, p. 58.

Scalidae*Scala bonae-spei* Brnrd.

Scala bonae-spei Barnard, 1963, p. 104.

Abyssochrysidae*Abyssochrysos melanioides* Tomlin

Abyssochrysos melanioides Tomlin, 1927, p. 78, figs. 1–3. Barnard, 1963, p. 141.

Previously taken by the *Pieter Faure* off Cape Point in 800–1,000 fathoms; now shown to occur down to 1,490 fathoms.

Trochidae*Calliotropis metallica* (W.-M. & A.)

(Fig. 8 a)

Solariella metallica Wood-Mason & Alcock, 1891, p. 444, fig. 12 a, b.

Previously taken by the *Pieter Faure* off Cape Point. A notable extension of the hitherto known distribution: Gulf of Manaar, East Indies, East Africa. An account of the species will be given in Part IV of Barnard, Contributions . . . South African Marine Mollusca.

Calliotropis pompe n. sp.

(Fig. 8 b)

Shell thin-walled. Protoconch nucleus plus 7 whorls. First to 3rd whorls with *c.* 23-24 slightly retractive axial pliculae; on 3rd and following whorls crossed by a peripheral spiral lira at lower third of whorl, and at end of 3rd whorl and on 4th and following whorls by a second lira at upper third; the upper lira forms conical tubercles at the intersections with the pliculae, *c.* 18-20 increasing to *c.* 25 on 6th whorl, but becoming feeble and eventually evanescent on 7th whorl; on 5th-7th whorls the pliculae are distinct from suture to upper lira,

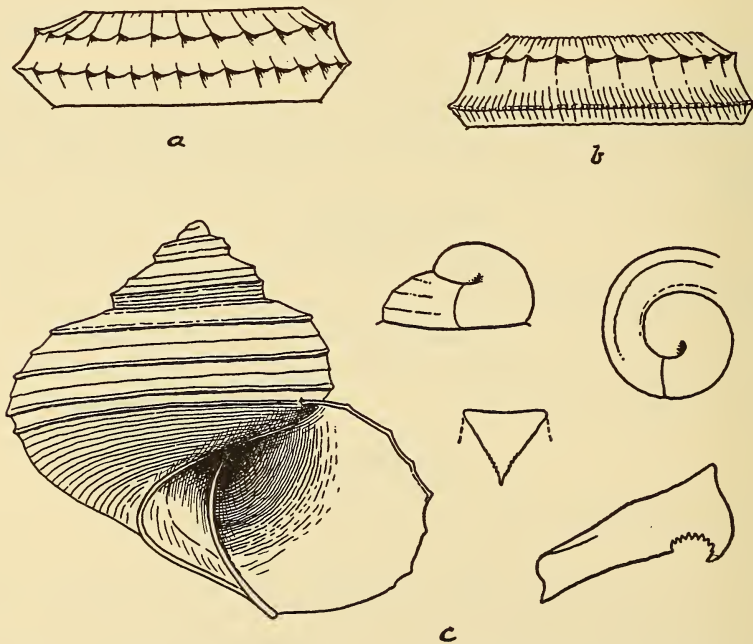


FIG. 8. a, b, sculpture of penultimate whorl of *Calliotropis metallica* (W.-M. & A.) and *C. pompe* n. sp. c, *Calliostoma glaucophaos* n. sp., with two views of protoconch, central and 1st marginal plates of radula.

extending less distinctly to the lower lira; from end of 5th whorl onwards accessory pliculae develop at the suture, 2-3 between each pair of main pliculae; similar accessory pliculae develop on the lower lira, so that the latter becomes finely granulate; on 7th whorl all the pliculae become less distinct and more or less indistinguishable from the growth-lines; the lower lira becomes almost smooth. On base growth-lines and pliculae continued, the latter becoming stronger towards the umbilicus; 5 spiral lirae, the outer 3 nearly smooth, the next one granulate, and the one bordering the umbilicus strongly granulate; umbilicus plicate within. 19×17 mm. (6 whorls); 22×20 mm. (7 whorls).

White, with a faint greenish tinge due to the nacreous interior. Operculum pale corneous.

Jaws and radula as in *granolirata*.

Off Cape Point: $34^{\circ} 42' S.$, $16^{\circ} 54' E.$, 1,725-1,780 fathoms, 1 dead; $33^{\circ} 50' S.$, $16^{\circ} 30' E.$, 1,480-1,660 fathoms, 1 living, 1 dead (Types) (S. Afr. Mus. A9795 and A9883 (Types); F. H. Talbot coll.).

Remarks. The procession (*pompe*) of close-set axial pliculae, and the granulate, instead of tuberculate (as in *metallica* and other species), lower spiral lira, seem distinctive.

Gen. BASILISSA Watson

Watson, 1879, p. 593; 1886, p. 96. Schepman, 1908, p. 61. Thiele, 1925, pp. 43, 44; 1929, p. 48.

Dall (1881) instituted the genus *Fluxina*, and considered that it should probably be placed in the *Solariidae*, occupying in this family an analogous position to that of *Basilissa* among the *Trochidae*.

Fluxina discula Dall (1889, p. 273, pl. 23, figs. 5, 6), *F. marginata* Schepm. 1908, *F. trochiformis* Schepm. 1908 and the present species are very much alike in shape, differing from *Basilissa* by being strongly depressed. Admittedly the difference is one of degree only, because *brunnea* Dall 1881 (genotype of *Fluxina*), *lampra* Watson 1879 (genotype of *Basilissa*) and *alta* Watson var. *delicatula* Dall (see 1889, pl. 22, fig. 2) form a series transitional to the higher species *simplex* Watson 1879 and *superba* Watson 1879.

The radulae of only a few species are known, e.g. *lampra* (see Schepman, 1908), *sibogae* Schepman 1908, and *trochiformis* (see Thiele, 1925). Thiele gave no figure of the latter. The present species has a radula somewhat resembling that of *sibogae*, but not at all like that of *lampra*.

Provisionally this n. sp. is included in *Basilissa*.

Basilissa gelida n. sp.

(Fig. 9)

Protoconch nucleus plus 5 whorls. Smooth, polished, periphery very sharply keeled. No spiral sculpture; fine close growth-lines, sigmoid both above the keel and on base. Umbilical wall smooth, vertical; umbilical margin rectangular, not keeled, no impressed line outside the margin. 8, alt. 3.5 mm.

White, transparent, slightly iridescent when wet.

Operculum not observed.

Jaws present, reticulate. Radula with *c.* 45 rows, central plate quadrangular, with slightly overturned cutting-edge, with feeble median cusp (? other serrations), lateral plate wide, with slightly overturned serrulate cutting-edge, 1st marginal plate, hastate, distally obscurely serrulate, and 3 slender hamate marginals.

33° 26' S., 16° 33' E., 1,240–1,300 fathoms 1 living (S. Afr. Mus. A9720, F. H. Talbot coll.).



FIG. 9. *Basilissa gelida* n. sp., with radula plates.

Remarks. Differs from *Fluxina discula* Dall 1889 from the West Indies, 982 fathoms, only in having a non-carinate umbilical margin, without impressed line; and in being slightly nacreous.

There are 3, possibly 4, slender outer marginal plates in the radula, in addition to the stouter 1st marginal plate.

Calliostoma glaucophaos n. sp.

(Fig. 8 *c*)

Shell like *Solariella* in shape, slightly wider than high. Protoconch nucleus plus $3\frac{1}{2}$ whorls. Protoconch alt. 0.8, diam. 1 mm., smooth. Profile of whorls rounded, but with tabulate shoulder at upper third. One spiral lira forming the shoulder and one at middle of whorl, both beginning on 1st whorl; a third, peripheral lira concealed in the suture until the last half-whorl. On the tabulate shoulder 1 lira near the suture followed by 1 (2nd whorl), 3–4 (3rd whorl), 5 (last half-whorl) very fine lirae, also between inner lira and suture 2–3 very fine lirae visible on last half-whorl. Beginning on 2nd whorl 1 lira between the shoulder and mid-whorl lirae, and 1 between the latter and the peripheral lirae. Base with 1 lira almost as strong as the peripheral lira, starting at junction of outer lip and body-whorl, followed by *c.* 18 feeble lirae; umbilicus bordered by a strong lira; 1 feebler lira within the umbilicus, which is pervious but narrows rapidly. Growth-lines mostly faint, not pliculose. Aperture subcircular, slightly angular where outer lip meets the narrow lira-like columella. 11 (long) \times 12.5 (diam.) mm.

White, iridescent, umbilical and columellar lirae opaque white. Operculum amber.

Jaws with intercalated platelets. Radula with *c.* 50 rows, resembling that of

perfragile, but the central plate is broader, with a broadly triangular cusp, minutely serrulate distally; 5 lateral plates, 1st marginal plate strong, hooked and serrate distally. The lateral plates and especially the central plate are so very delicate that the shape of their bases could not be determined.

33° 52' S., 16° 51' E., 1,380–1,520 fathoms, 2 living (S. Afr. Mus. A9830, F. H. Talbot coll.).

Remarks. The specimen with the strong outer basal lira is figured. In the other shell this lira is much weaker, but both it and the next one are more distinct than the other basal lirae. The columella appears to have been injured and repaired, and consequently is broader and somewhat concavely angular.

Although clearly distinct, these shells are not unlike *Trochus* (*Margarita*) *charopus* Watson 1879 and 1886 from Kerguelen, 105 fathoms, and, though less so, *T(M) brychius* Watson 1879 and 1886, also from Kerguelen, 1,260 fathoms.

There is a general resemblance to a *Solariella*; and unless the animal had been present these shells might perhaps have been assigned to *Solariella*.

NUDIBRANCHIATA

Doridoxidae

Doridoxa benthalis n. sp.

(Fig. 10)

Length of animal as preserved *c.* 32 mm. Dull brown, the retracted rhinophores orange.

Frontal veil with lateral processes, on the underside of each process a wrinkled fold of skin connecting with the wrinkled margin of the mouth.

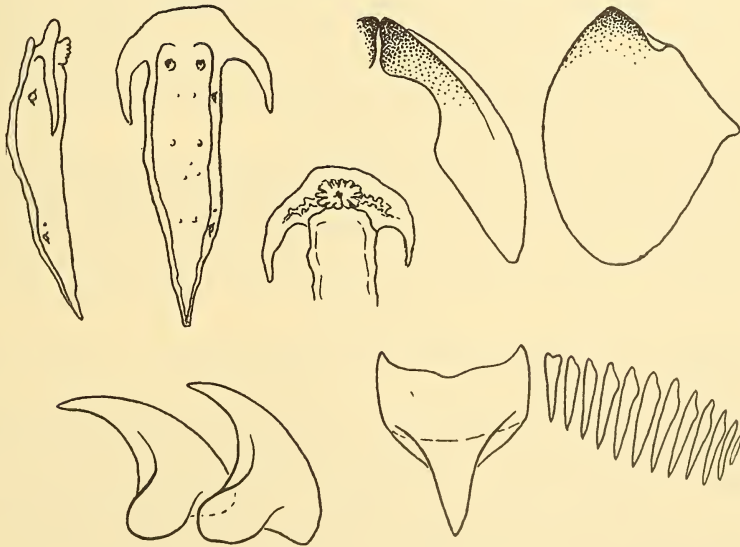


FIG. 10. *Doridoxa benthalis* n. sp. Lateral and dorsal views of animal; ventral view of anterior end; front and inner views of left mandible; two central plates of radula in side view; central and lateral plates of radula.

Foot tapering posteriorly. Dorsal surface smooth, but with faint indications of 4 pairs of small warts. No gills. Genital opening, nephroproct, and anus on right side, the nephroproct a short distance in front of anus.

Jaws large, 4.5 mm. long, cutting-edge entire. Radula with 30 rows, central plate very strong, lateral plates 11-12, dagger-like, graduated, the middle ones slightly larger than the others.

Internal organs not well enough preserved to determine the presence of a blood-gland, or whether there were 2 spermathecae. There were, however, no liver diverticula.

34° 42' S., 16° 54' E., 1,725-1,780 fathoms, 1 (S. Afr. Mus. A9796, F. H. Talbot coll.).

Remarks. In spite of uncertainty about the internal anatomy, this specimen seems certainly to be a species of *Doridoxa* Bergh 1900, which was instituted for *ingolfiana* Bergh taken in the North Atlantic. There seem to be no later records.

I have not seen the original description, but Bergh (1906, pl. 31, figs. 7-12) gave 6 figures (presumably reproduced from his Ingolf Report, 1900), and Thiele (1929, fig. 521, after Bergh) figured the radula. The resemblance is close, but the present specimen appears to have no tentacles, larger lateral processes, and small differences in the radula plates. A n. sp. seems warranted and desirable.

SCAPHOPODA

Dentaliidae

Dentalium eualdes n. sp.

Thick-walled, moderately curved, ribs very numerous. Ribs 16-18 on the smallest shells (30 mm), increasing to 65-85 in the largest shells; ribs subequal to the grooves in larger specimens, but in juveniles usually narrower; the interpolation of intermediaries tends to narrow the grooves, and in large shells the ribs may be at least as wide as the grooves.

Ribs extending to aperture, but in the two largest shells there is an unribbed (or with only faint traces of ribs) 'collar' 3-4 mm. long around the aperture.

Apical slit usually present, may be 5-7 mm. long; juveniles may show 2-4 elongate perforations.

86, diam. aperture 13, apex 3 mm.; 90 × 12.5 × 2.75; 98 × 14.5 × 2.3; 99 × 13 × 1.75 mm.

Dull grey, the unribbed collar, when present, white.

Radula as in *salpinx*.

33° 36' S., 16° 15' E., 1,520-1,570 fathoms, 8 living (Types); 33° 45½' S., 16° 23½' E., 1,480 fathoms, 1 living and 1 juv.; 33° 49' S., 16° 30' E., 1,500 fathoms, 11 living and 3 juv.; 33° 26' S., 16° 33' E., 1,300 fathoms, 1 living; 34° 37' S., 17° 03' E., 1,580-1,620 fathoms, 1 adult living, 1 juv. dead; 33° 50' S., 16° 30' E., 1,480-1,660 fathoms, 18 living, 2 dead; 33° 52' S., 16° 51' E., 1,380-1,520 fathoms, 1 living, 1 dead; 34° 05' S., 16° 58' E., 1,470-1,490 fathoms, 12 living, 1 dead; 34° 36' S., 17° 00' E., 1,500-1,760 fathoms, 1 juv.

dead (S. Afr. Mus. Ag736 (Types), Ag747, Ag765, Ag767, Ag784, Ag815, Ag834, Ag849, Ag875; F. H. Talbot coll.).

Remarks. Grows to a larger size than *salpinx* Tomlin, and has many more ribs.

It is not *capillosum*: it is more strongly curved during early growth, and the diameter increases more rapidly. On one of the smaller examples (52 mm.) the diameter increases from 1.3 to 5.5 mm. in a length of 30 mm., whereas in a specimen of *capillosum* (identified by Tomlin) the diameter reaches only 3 mm. in the same length. These two differential characters can also be observed by superimposing the 52 mm. shell on Watson's figure of the *Challenger* example of *capillosum* (1886 pl. 1, fig. 1 a).

The present species is stouter than the figure of *magnificum* Smith 1898 pl. 7, figs. 5, 5a (= *vernedei* Hanley).

Dentalium lardum n. sp.

Moderately curved. Smooth, glossy, with fine growth-lines. Apical portion ribbed, the ribs usually extending farther on the concave side, *c.* 20, increasing to 27-30 (but somewhat obscure), obsolete on later growth. No slit or perforations. Details of the specimens as follows.

40, diam. aperture 5.5, apex 0.75 mm. Glossy white; ribbed for the apical 23 mm., faintly indicated for another 7-8 mm. on concave side, thereafter only growth-lines; ribs 20, increasing to 27.

49 × 7 × 1.3 mm. Glossy, first two-thirds grey, thereafter white; ribs faintly visible only in the apical 10 mm.

50 × 7 × 1.5 mm. Glossy, ivory-white; partly corroded apically, but no trace of ribs.

65 × 8.5 × 2 mm. Glossy, grey or yellowish-grey; ribs faintly visible in apical 15-18 mm., more so on concave side than on convex, ribs *c.* 30 (but not easy to trace).

33° 49' S., 16° 30' E., 1,500 fathoms, 5 dead (Types); 33° 52' S., 16° 51' E., 1,380-1,520 fathoms, 2 dead; 34° 36' S., 17° 00' E., 1,500-1,760 fathoms, 1 juv. dead (S. Afr. Mus. Ag768 (Types), Ag835, Ag876; F. H. Talbot coll.).

The specific name from the smooth, somewhat greasy appearance.

Dentalium sp.

One shell 7.5, one 8, one 11, one 13, and one 17 mm. long. Slightly curved. Ribs 9 on all specimens from apex onwards; at 13 mm. one intermediary begins between each pair of main ribs, and on the last 4 mm. of the 17 mm. shell there are 18 ribs, the intermediaries almost as strong as the main ribs. Apical diam. 0.4-0.5, basal diam. of 13 mm. shell 1.3, of 17 mm. shell 1.5 mm. Growth-lines but no other sculpture between the ribs.

33° 26' S., 16° 33' E., 1,240-1,300 fathoms, the 2 largest; 34° 37' S., 17° 03' E., 1,580-1,620 fathoms, 1; 34° 36' S., 17° 00' E., 1,500-1,760 fathoms, 1; all dead (S. Afr. Mus. Ag885, Ag877, Ag785 resp.; F. H. Talbot coll.).

Remarks. Further material is desirable before a name is given to these specimens. But attention is drawn to the rather sudden doubling of the number of ribs; a larger specimen with the apical 13 or 14 mm. broken off would be regarded as an 18-ribbed species.

Dentalium sp.

33° 50' S., 17° 21' E., 600 fathoms, 17 dead (S. Afr. Mus. Ag769, F. H. Talbot coll.).

A species with 18–22 ribs, comparable with but distinct from *plurifissuratum*. Up to 35 mm.

In this case also, more and better material seems desirable before attaching a specific name to these specimens.

Dentalium capense Tomlin

Dentalium capense Tomlin, 1931, p. 340.

33° 50' S., 17° 21' E., 600 fathoms, 1 living, 2 dead (S. Afr. Mus. Ag770, F. H. Talbot coll.).

Previously taken by the *Pieter Faure* off Cape Point in 900 fathoms; and also off Durban in 440 fathoms.

Cadulidae

Cadulus promontorii n. sp.

Previously taken by the *Pieter Faure* off Cape Point in 700 fathoms.

For description and figure see: Barnard, Contributions . . . South African Marine Mollusca, Part IV [in press].

CEPHALOPODA

Cranchiidae

Leachia cyclura Lesueur

Leachia eschscholtzii Rathke, Chun, 1910, p. 347, pl. 52, figs. 4–7.

33° 45' S., 16° 23' E., 1,480 fathoms, 1 specimen (S. Afr. Mus. Ag749, F. H. Talbot coll.).

LAMELLIBRANCHIATA

Nuculidae

Nucula (Pronucula) benguelana Clarke

(Fig. 11 a)

Pronucula benguelana Clarke, 1961, p. 368, pl. 3, figs. 9, 11.

Shell thin, subtriangular, not very oblique, length only slightly greater than altitude. Young shell, alt. 1 mm., large, prominent and sharply demarcated from rest of shell. Whole surface with numerous fine radiating striae, except in the positions of the lunule and escutcheon, which are otherwise undefined. Teeth anterior 7–8, posterior 6–7; ligament pit vertical to hinge-

line; margin internally crenulate. Length 3.75, alt. 3.5 mm. Corneous, young shell paler.

34° 26' S., 17° 00' E., 1,500–1,760 fathoms, 1 living (S. Afr. Mus. Ag882, F. H. Talbot coll.).

30° 14' S., 13° 3' E., 1,703 fathoms (approx. 400 miles north-west of Cape Town) (Clarke).

Remarks. Somewhat similar in shape to the North Pacific *profundorum* Smith (1885, p. 229, pl. 18, fig. 13), and the striae are, in Smith's words: 'hair-like whitish lines'.

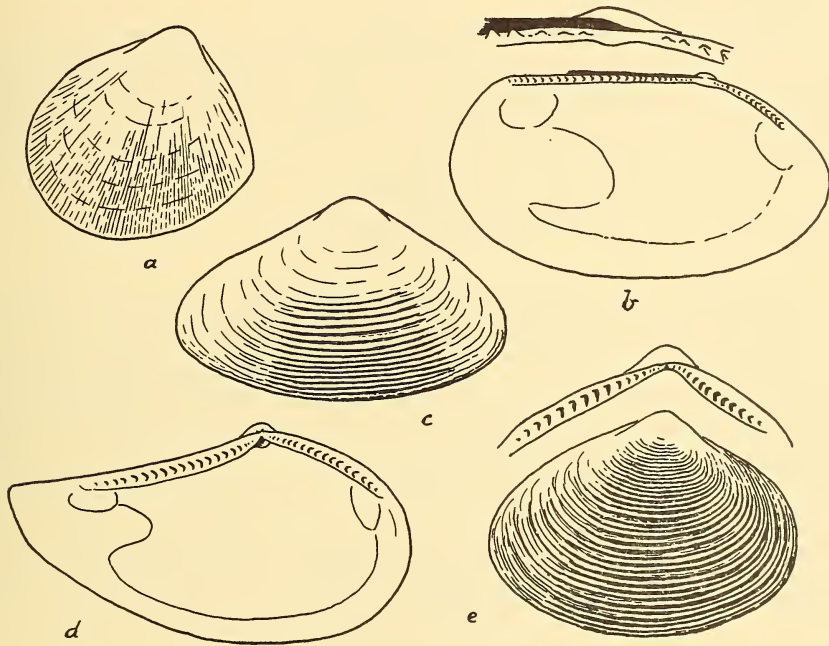


FIG. 11. *a*, *Nucula (Pronucula) benguelana* Clarke. *b*, *Malletia estheriopsis* n. sp. *c*, *Leda parsimonia* n. sp. *d*, *Leda macella* n. sp. *e*, *Sarepta* sp.

Malletiidae

Malletia estheriopsis n. sp.

(Fig. 11 *b*)

Thin, oblong-oval, rounded at both ends, the anterior end a little less broadly rounded, posterior dorsal margin straight; umbones at anterior third, not prominent. Concentric growth-lines only. Teeth anterior 12–13, posterior 28–30, 2–3 inconspicuous teeth on each side of the interruption below the umbo; ligament entirely external, conspicuous, about $\frac{2}{3}$ length of straight dorsal margin. Pallial sinus deep. Periostracum thin, pale yellowish. Length 15, alt. 8 mm. Siphons completely fused.

Cape Point N. 70° E. 40 miles, 800 fathoms, 1 (S. Afr. Mus. P.F. coll.).
 33° 50' S., 16° 30' E., 1,480–1,660 fathoms, 2 living (Types); 34° 36' S.,
 17° 00' E., 1,500–1,760 fathoms, 2 living; 34° 33' S., 16° 43' E., 1,770–1,880
 fathoms, 1 living; 34° 05' S., 16° 58' E., 1,470–1,490 fathoms, 3 living (S. Afr.
 Mus. Ag817 (Types), Ag880, Ag890, and Ag891 respectively; F. H. Talbot
 coll.).

Remarks. These specimens seem to differ from other species in their bean-like shape, rounded at both ends. Jeffreys (1879, p. 573) said his *Silicula fragilis* was like an *Estheria* (Crustacea, Conchostraca), but these specimens qualify even better for the epithet.

Conchologically they closely resemble the Arctic *obtusa* Sars (1878, p. 41, pl. 19, figs. 3a–c) but are not so obtuse and truncate posteriorly. Geographically, the nearest species is *pallida* Smith 1885 (p. 246, pl. 20, figs. 8, 8 a) from 2,250 fathoms between Tristan da Cunha and the Cape.

Ledidae

Leda parsimonia n. sp.

(Fig. 11 c)

Triangular, almost equilateral, umbones only slightly nearer to the anterior end; rounded at both ends. Middle of later part of shell with concentric pliculae, closer together near the margin, rest of shell with growth-lines only. Teeth 12 anterior, 15 posterior, with a few minute ones on each side of ligament pit. Pallial sinus very shallow. Length 13·25, alt. 8·25 mm. Yellowish-brown, glossy. Animal decomposed; siphons?

33° 50' S., 16° 30' E., 1,480–1,660 fathoms, 1 living (S. Afr. Mus. Ag818, F. H. Talbot coll.).

Remarks. Resembles *Yoldia semisculpta* Thiele in being only partially plicate, but differs in shape, and does not gape.

Leda macella n. sp.

(Fig. 11 d)

Rostrate, anterior end broadly rounded, dorsal posterior margin straight (or very slightly concave), rostrum angular above, obliquely truncate, umbones at anterior $\frac{2}{3}$ of length. Border of lunule from umbo to upper corner of rostrum curved. Concentric growth-lines only, some on the later part of shell coarser than the others. Teeth at shell length 12 mm. 12–13 anterior, 14 posterior, increasing to 15–16 and 16–17 respectively, with a few minute ones on each side of the ligament pit. Pallial sinus moderately deep. No ridge on inner side of rostrum below, and parallel to the posterior series of teeth. Periostracum thin, yellowish or olivaceous brown. Length 20, alt. 10·5, thickness (valves together) 8 mm.

33° 26' S., 16° 33' E., 1,240–1,300 fathoms, 1 living; 33° 45 $\frac{1}{2}$ ' S., 16° 23 $\frac{1}{2}$ ' E., 1,480 fathoms, 1 living; 33° 50' S., 16° 30' E., 1,480–1,660 fathoms,

1 living; 34° 05' S., 16° 58' E., 1,470–1,490 fathoms, a lot living (Types) (S. Afr. Mus. A9729, A9751, A9819, and A9851 (Types); F. H. Talbot coll.).

Remarks. Similar in shape to *prostrata* Thiele 1931 and *silicula* Thiele 1931, but not so strongly nor so narrowly rostrate, and the rostrum is obliquely truncate; no longitudinal ridge on inside of rostrum; and the number of posterior teeth is less, in conformity with the shorter rostrum.

L. prostrata came from 981 metres in the middle of the South Atlantic (25° 25' S., 6° 12' E.), and *silicula* from 400–463 metres off the East African coast.

Sarepta sp.

(Fig. 11 e)

Interior not nacreous (but only one dead valve present). Oval, not very oblique, length greater than altitude; posterior margin convex. Concentric ridges over whole surface. No lunule. Teeth anterior 12, posterior 10. Ligament pit minute. Margin internally smooth. Length 5, alt. 4 mm.

34° 26' S., 17° 00' E., 1,500–1,760 fathoms, 1 valve (S. Afr. Mus. A9881, F. H. Talbot coll.).

Limopsidae

Limopsis cf. *straminea* Smith

Limopsis straminea Smith 1885, p. 255, pl. 18, figs. 5, 5 a.

Shell oblique, length greater than altitude; anterior margin convex, posterior margin nearly straight in upper half. Umbo slightly nearer to anterior end of hinge-line. Concentric lirae, and fine radial striae marking the insertion of the bristles. Internally smooth, no radial ridges, and no marginal crenulations; no thickened pad at posterior adductor scar. Lower margin of hinge slightly concave, very narrowly separated from ligament pit. Teeth interrupted, in juv. up to 10 mm. 4–5, later 5–7 on each side (occasionally 8 on posterior side), the posterior ones slightly more oblique than the anterior ones.

Length 27–28, alt. 24–25, width (valves together) 10–11 mm.

Foot with posterior process; byssus rudimentary.

33° 26' S., 16° 33' E., 1,240–1,300 fathoms, 3 living; 33° 26' S., 16° 15' E., 1,520–1,570 fathoms, 17 living; 33° 45½' S., 16° 23½' E., 1,480 fathoms 12 living; 33° 49' S., 16° 30' E., 1,500 fathoms, 10 living; 34° 37' S., 17° 03' E., 1,580–1,620 fathoms, 3 living; 33° 50' S., 16° 30' E., 1,480–1,660 fathoms, 6 living, 5 valves; 34° 05' S., 16° 58' E., 1,470–1,490 fathoms, 34 living, 4 valves; 34° 36' S., 17° 00' E., 1,500–1,760 fathoms, 2 living, one valve (S. Afr. Mus. A9727, A9739, A9750, A9766, A9786, A9816, A9850, A9879; F. H. Talbot coll.).

Remarks. In juveniles up to about 10 mm. long the obliquity of the shell is not so noticeable as in larger shells; and the lower margin of the hinge is not so narrowly separated from the ligament pit.

Assigning a specific name to these shells is difficult. A valve superimposed on Smith's figure of *straminea* agrees exactly in shape. The number of teeth is 'about 12'. Smith did not mention whether the margin was internally crenulate, but presumably it was not (he was dubious about this as a specific character: p. 257): he gave no internal view of the shell.

L. straminea was taken between Kerguelen and Heard Islands at only 150 fathoms; nevertheless the present shells may be conspecific.

Ungulinidae

Thyasira investigatoris (Smith)

Cryptodon investigatoris Smith, 1895, p. 13, pl. 2, figs. 6, 6 a; 1897, Moll. pl. 3, figs. 2-2 b.

Thyasira investigatoris (Smith) Thiele & Jaeckel, 1931, p. 218.

33° 50' S., 17° 21' E., 600 fathoms, 1 right valve (S. Afr. Mus. A9708, F. H. Talbot coll.).

Previously taken (one specimen) by the *Pieter Faure* off Cape Point in 720-800 fathoms.

Semelidae

Abra longicallus (Scacchi)

Abra longicallis [sic] Sars, 1878, p. 74, pl. 6, figs. 3 a-c; pl. 20, fig. 4.

Syndesmya longicallus Scacchi, Dautzenberg, 1927, p. 333.

Agreeing with Sars's description and figures. Length 13, alt. 9 mm. Up to 25 mm. (Sars).

33° 50' S., 17° 21' E., 600 fathoms, 1 living, 2 dead; 34° 26' S., 17° 00' E., 1,500-1,760 fathoms, 1 living (S. Afr. Mus. A9709, A9889; coll. F. H. Talbot, Aug. and Dec. 1959).

Distribution. Arctic and North Atlantic, Mediterranean, Canaries, Azores; Gulf of Mexico; 20-2,435 fathoms (Jeffreys).

Verticordiidae

Halicardia flexuosa (Verrill & Smith)

Halicardia [sic] *flexuosa* (Verrill & Smith), Tomlin, 1937, p. 23, fig. 1 (references).

33° 50' S., 17° 21' E., 600 fathoms, 1 living (S. Afr. Mus. A9707, F. H. Talbot coll.).

The *Pieter Faure* took 2 dead specimens off Cape Point in 460-650 fathoms.

Cuspidariidae

Cuspidaria spp.

Until better material is obtained it is not advisable to attach definite names to these specimens.

33° 50' S., 17° 21' E., 600 fathoms, 1 living (S. Afr. Mus. A9710, F. H. Talbot coll.).

13 × 7.5 × 6 mm. Similar in shape to the Atlantic *claviculata* Dall and *congenita* Smith, but has no 'clavicle'; and to the South Australian *meridionalis* Smith.

34° 37' S., 17° 03' E., 1,580–1,620 fathoms, 2 right valves (one of them broken); 34° 36' S., 17° 00' E., 1,500–1,760 fathoms, one broken left valve (S. Afr. Mus. A9787 and A9878, F. H. Talbot coll.).

The complete right valve is 40 × 25 mm., the broken left valve is at least 30 mm. alt. Compare: *maxima* Dautzenberg & Fischer from the Azores, 1,850 metres. Surface smooth, growth-lines only. Posterior lateral tooth in right valve forms a thickened, sausage-like ridge; the ligament pit is scarcely visible as it lies in a plane almost perpendicular to the sagittal plane of the valve.

SUMMARY

A collection of deep-sea mollusca from west of Cape Point, South Africa, in depths between 600 and 1,880 fathoms is described. The collection comprises approximately 590 specimens of approximately 78 species including 25 new species.

ACKNOWLEDGMENTS

This paper is part of my research work on South African Marine Mollusca carried out with the aid of a research grant from the South African Council for Scientific and Industrial Research, to whom thanks and acknowledgment are herewith made.

The deep-trawling was done by courtesy of the Director, Division of Sea Fisheries, Cape Town, to whom we are very grateful.

The Trustees of the South African Museum are grateful to the Council for Scientific and Industrial Research for the award of a grant for the publication of this paper.

REFERENCES

- BARNARD, K. H. 1958. Contributions to the knowledge of South African Marine Mollusca. Part I. Gastropoda: Prosobranchiata: Toxoglossa. *Ann. S. Afr. Mus.* **44**, 73–163. 30 text-figs., 1 pl.
- BARNARD, K. H. 1959. *Idem*. Part II. Rhachiglossa. *Ann. S. Afr. Mus.* **45**, 1–237, 52 text-figs.
- BARNARD, K. H. 1960a. The rediscovery of *Guivillea* Watson. *Journ. Conch.* **24**, 398.
- BARNARD, K. H. 1960b. The genus *Charitodoron* Tomlin. *Journ. Conch.* **24**, 402.
- BARNARD, K. H. 1960c. New species of South African marine Gastropods. *Journ. Conch.* **24**, 438–442. 3 text-figs.
- BARNARD, K. H. 1963. Contributions to the knowledge of South African Marine Mollusca. Part III. Taenioglossa. *Ann. S. Afr. Mus.* **47**, 1–199, 37 text-figs.
- BARNARD, K. H. [in press]. *Idem*. Part IV. Rhipidoglossa, Docoglossa, Tectibranchiata, Polyplacophora, Scaphopoda. *Ann. S. Afr. Mus.* **47** (2).
- BARNARD, K. H. [in press]. *Idem*. Part V. Lamellibranchiata. *Ann. S. Afr. Mus.* **47** (3).
- BERGH, R. 1900. Nudibranchiate Gastropoda. *Danish Ingolf Exped.* **2** (3), 49, 5 pls.
- BERGH, R. 1906. Ueber clado- und holohepatische nudibranchiate Gastropoden. *Zool. Jahrb.* **23**, Abt. Syst. 739–742. 1 pl.
- CHUN, C. 1910. Die Cephalopoden. Part I. Oegopsida. *Wiss. Ergebn. 'Valdivia'* **18**, 1–401. pls. 1–61.
- CLARKE, A. H., Jr. 1961. Abyssal Mollusks from the South Atlantic Ocean. *Bull. Mus. Comp. Zool. Harv.* **125**, 345–387. 4 pls. (photos not good).
- DALL, W. H. 1881. Reports on the Results of Dredging, under the Supervision of Alexander Agassiz, in the Gulf of Mexico, and in the Caribbean Sea, 1877–79 by the United States Coast Survey Steamer 'Blake', Lieutenant-Commander C. D. Sigsbee, U.S.N., and Commander J. R. Bartlett, U.S.N., commanding. XV. Preliminary Report on the Mollusca. *Bull. Mus. Comp. Zool. Harv.* **9**, 33–144.

- DALL, W. H. 1889. *Idem*. XXIX. Report on the Mollusca. Part II. Gastropoda and Scaphoda. *Bull. Mus. Comp. Zool. Harv.* **18**, 1-492. 31 pls.
- DAUTZENBERG, P. 1889. Révision des Mollusques marins des Açores. *Res. Camp. Sci. Monaco* **1**, 1-112. 4 pls.
- DAUTZENBERG, P. 1912. Mollusques marins. Mission Gruvel sur la côte occidentale d'Afrique (1909-1910). *Ann. Inst. ocean.* **5** (3), 1-111. pls. 1-3.
- DAUTZENBERG, P. 1927. Mollusques provenant des campagnes scientifiques du Prince Albert 1^{er} de Monaco dans l'Océan Atlantique et dans le Golfe de Gascogne. *Res. Camp. Sci. Monaco* **72**, 1-401. 9 pls.
- JEFFREYS, J. G. 1879. On the Mollusca procured during the 'Lightning' and 'Porcupine' Expeditions, 1868-70. Part 2. *Proc. zool. Soc. Lond.*, vol. pp. 553-588. pls. 45, 46.
- LOCARD, A. 1897. Mollusques Testaces. I. Expéditions scientifiques du *Travailleur* et du *Talisman* pendant les années 1880-1883. Paris. pp. vi, 516. 22 pls.
- MELVILL, J. C., & STANDEN, R. 1907 (issued separately). The Marine Mollusca of the Scottish National Antarctic Expedition. *Trans. Roy. Soc. Edinb.* **46**, 1908, 119-157. 1 pl.
- PELSENEER, P. 1888. Report on the Anatomy of the Deep-Sea Mollusca collected by H.M.S. *Challenger* in the years 1873-76. *Challenger Rep.* **27**, 1-42, pls. 1-4.
- POWELL, A. W. B. 1951. Antarctic and Subantarctic Mollusca: Pelecypoda and Gastropoda. *Discovery Rep.* **26**, 47-196. pls. 5-10, text-figs. A-N.
- SARS, G. O. 1878. *Mollusca Regionis Arcticae Norvegiae*. pp. 1-466. 32 pls. Christiana.
- SCHEPMAN, M. M. 1908. The Prosobranchia of the *Siboga* Expedition. Part I. Rhipidoglossa and Docoglossa. *Siboga Exp.* **49**, 1-107. pls. 1-9.
- SCHEPMAN, M. M. 1911. *Idem*. Part IV. Rachiglossa. *Siboga Exp.* **49**, 247-363. pls. 18-24.
- SMITH, E. A. 1885. Report on the Lamellibranchiata collected by H.M.S. *Challenger* during the years 1873-76. *Rep. Sci. Res. Challenger* **13**, 1-341. 25 pls.
- SMITH, E. A. 1895. Report upon the Mollusca dredged in the Bay of Bengal and the Arabian Sea during 1893-94. *Ann. Mag. Nat. Hist.* (6) **16**, 1-19. 2 pls.
- SMITH, E. A. 1899. On Mollusca from the Bay of Bengal and the Arabian Sea. *Ann. Mag. Nat. Hist.* (7) **4**, 237-251.
- SMITH, E. A. 1897-1909. *Illustrations of the Zoology of the R.I.M.S. Investigator*. Mollusca. pls. 1-23. Calcutta.
- SOUTH AFRICAN MUSEUM. 1961. Report for the year ended 31 March 1960. Cape Town.
- SOWERBY, G. B. 1903. Mollusca of South Africa. *Mar. Invest. S. Afr.* **2**, 213-232. pls. 3-5.
- THIELE, J. 1903. Die beschalten Gastropoden der deutschen Tiefsee-Expedition 1898-1899. B. Anatomisch-systematischen Untersuchungen einiger Gastropoden. *Wiss. Ergebn. Valdivia* **7**, 148-180. pls. 6-9 (1-4).
- THIELE, J. 1925. Gastropoden der Deutschen Tiefsee-Expedition. II Teil. *Wiss. Ergebn. Valdivia* **17**, 37-382. Text-figs., pls. 13-46 (1-34).
- THIELE, J. 1929. *Handbuch der systematischen Weichtierkunde*. I. Part I. Loricata: Prosobranchia. i-vi, 1-376. Text-figs. Jena: Fischer.
- THIELE, J., & JAECKEL, S. 1931. Muscheln der Deutschen Tiefsee-Expedition. *Wiss. Ergebn. 'Valdivia'* **21**, 161-268. pls. 1-5 (6-10).
- TOMLIN, J. R. LE B. 1927. Reports on the marine Mollusca in the collections of the South African Museum. II. Abyssochrysidæ, Oöcorythidæ. *Ann. S. Afr. Mus.* **25**, 77-83. Text-figs.
- TOMLIN, J. R. LE B. 1931. *Idem*. V. Scaphopoda. *Ann. S. Afr. Mus.* **29**, 337-340.
- TOMLIN, J. R. LE B. 1937. *Idem*. X. Verticordiidæ. *Ann. S. Afr. Mus.* **32**, 23, 24. 1 text-fig.
- VERRILL, A. E. 1885. Third Catalogue of Mollusca recently added to the fauna of the New England coast and the adjacent parts of the Atlantic, consisting mostly of deep-sea species, with notes on others previously recorded. *Trans. Connect. Ac. Arts. Sci.* **6**, 396-452. pls. 42-44.
- WATSON, R. B. 1879. Mollusca of H.M.S. *Challenger* Expedition. 2. Solenoconchia. 3. Trochidæ. *Journ. Linn. Soc. Lond.* **14**, 586-606.
- WATSON, R. B. 1882. *Idem*. Part XII. *Journ. Lin. Soc. Lond.* **16**, 324-343.
- WATSON, R. B. 1886. Report on the Scaphopoda and Gasteropoda collected by H.M.S. *Challenger* during the years 1873-1876. *Challenger Rep.* **15**, i-v, 1-756. pls. 50 + 3.
- WOOD-MASON, J., & ALCOCK, A. 1891. Natural History notes from H.M. Indian Marine Survey Steamer. Mollusca. *Ann. Mag. Nat. Hist.* **8**, 443-448.

[CONTINUED FROM INSIDE FRONT COVER

References thus appear as follows:

- AUGENER, H. 1913. Polychaeta. In Michaelsen, W., ed. *Beiträge zur Kenntnis der Meeresfauna Westafrikas*. 2, 67-625. Hamburg: Friederichsen.
- EKMAN, S. 1953. *Zoogeography of the sea*. London: Sidgwick & Jackson.
- HARTMAN, O. 1948a. The polychaetous annelids of Alaska. *Pacif. Sci.* 8, 1-58.
- HARTMAN, O. 1948b. The marine annelids erected by Kinberg. *Ark. Zool.* 42, 1-137.
- IZUKA, A. 1912. The errantiate Polychaeta of Japan. *J. Coll. Sci. Tokyo.* 30, art. 2, 1-262.
- MONRO, C. C. A. 1933. Notes on a collection of Polychaeta from South Africa. *Ann. Mag. nat. Hist.* (10), 11, 487-509.

SYNONYMY. Arrangement according to Schenk, E. T. & McMaster, J. H.: *Procedure in taxonomy*. 2nd ed. Stanford, Stanford university press, 1948. Bibliographic references modified.

'I. *Synonymy arranged according to chronology of names.*—All published scientific names by which a species has been previously designated (subsequent to 1758) are listed in chronological order, with bibliographical references to all descriptions or descriptive citations following in chronological order after each name. . . .

B. *Form of bibliographic references to synonymic names.*—The first reference following any name in the synonymy should be to the earliest citation of that name. This should be followed by references to all subsequent citations of the same name, arranged in chronological order. . . .'

Bibliographical references modified to consist of author's name, date of citation, pagination and illustrations (plates and figures).

Example:—

- Eulalia (Steggoa) capensis* Schmarda
Eulalis capensis Schmarda 1861, p. 86, pl. 29, fig. 231. Willey 1904, p. 259.
Eulalia viridis var. *capensis* McIntosh 1903, p. 34. Day 1953, p. 30.
Eulalia viridis (non Muller) Ehlers 1913, p. 455. Day 1934, p. 30.